GA-E350N-USB3

FT1 BGA motherboard
Built in with an AMD E-350 Dual-Core processor

User's Manual

Rev. 1001
12ME-E350NB3-1001R

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Trading GMbH
Bullenkoppel 16, 22047 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Motherboard
GA-E350N-USB3

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 2004/108/EC EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment	☒ **EN 61000-3-2** ☒ **EN 61000-3-3**	Disturbances in supply systems caused Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☒ **EN 55024**	Information Technology equipment-Immunity characteristics-Limits and methods of measurement
☐ **EN 55014-1**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☐ **EN 50082-1** ☐ **EN 50082-2**	Generic immunity standard Part 1: Residual, commercial and light industry Generic immunity standard Part 2: Industrial environment
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55014-2**	Immunity requirements for household appliances tools and similar apparatus
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 50091- 2**	EMC requirements for uninterruptible power systems (UPS)
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment		
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals		
☒ **CE marking**		(EC conformity marking)	

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 2006/95/EC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☒ **EN 60950**	Safety for information technology equipment including electrical business equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

Signature : Timmy Huang

(Stamp)

Date : Dec. 17, 2010

Name : Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number: GA-E350N-USB3

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a),Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: Dec. 17, 2010

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

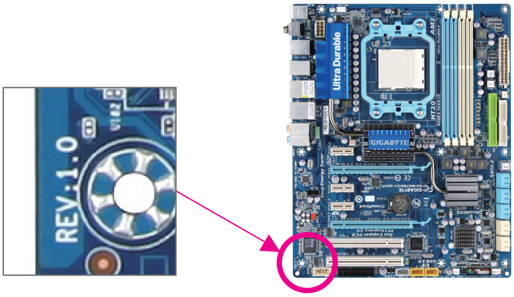
- For quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the User's Manual.

For product-related information, check on our website at:
http://www.gigabyte.com

Identifying Your Motherboard Revision

The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.

Example:



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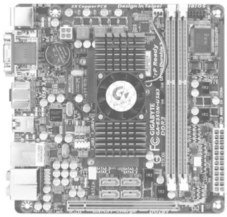
Box Contents



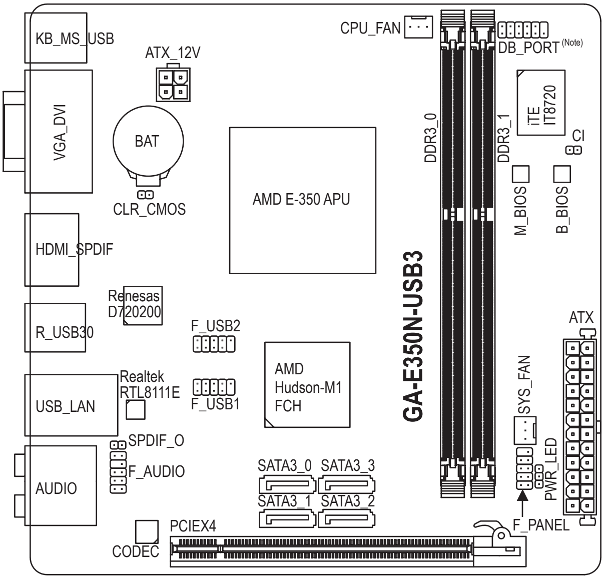
- ☑ GA-E350N-USB3 motherboard
- ☑ Motherboard driver disk
- ☑ User's Manual
- ☑ Quick Installation Guide
- ☑ Two SATA cables
- ☑ I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

Optional Items

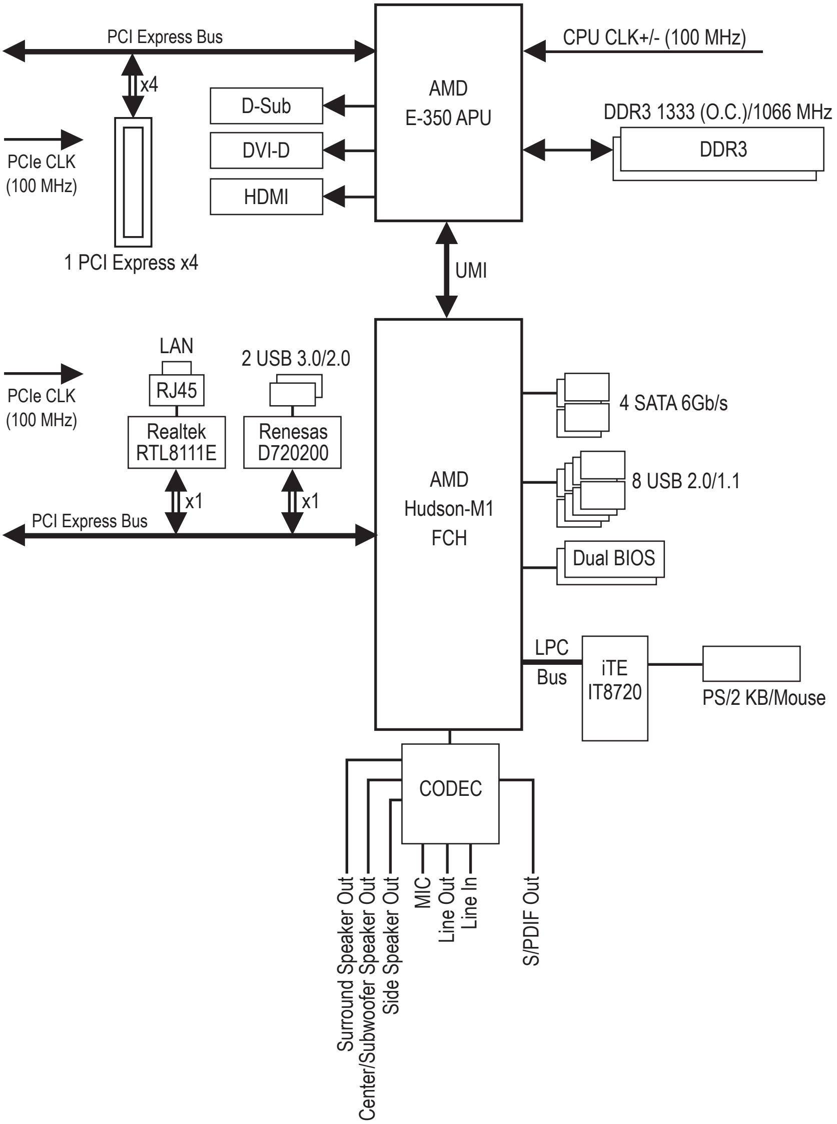
- ☐ 2-port USB 2.0 bracket (Part No. 12CR1-1UB030-5*R)
- ☐ 2-port SATA power cable (Part No. 12CF1-2SERPW-0*R)

GA-E350N-USB3 Motherboard Layout


KB_MS_USB
ATX_12V
CPU_FAN
DB_PORT (Note)
VGA_DVI
BAT
iTE
IT8720
DDR3_0
DDR3_1
CI
CLR_CMOS
AMD E-350 APU
M_BIOS
B_BIOS
HDMI_SPDIF
GA-E350N-USB3
Renesas
D720200
F_USB2
ATX
R_USB30
Realtek
RTL8111E
AMD
Hudson-M1
FCH
SYS_FAN
USB_LAN
F_USB1
SPDIF_O
F_AUDIO
SATA3_0
SATA3_3
PWR_LED
AUDIO
SATA3_1
SATA3_2
F_PANEL
PCIEX4
CODEC

(Note) This port is mainly used by repair technicians for debugging and problem diagnosis.

GA-E350N-USB3 Motherboard Block Diagram


PCI Express Bus
x4
PCIe CLK
(100 MHz)
1 PCI Express x4
D-Sub
DVI-D
HDMI
AMD
E-350 APU
CPU CLK+/- (100 MHz)
DDR3 1333 (O.C.)/1066 MHz
DDR3
UMI
LAN
RJ45
Realtek
RTL8111E
2 USB 3.0/2.0
Renesas
D720200
PCIe CLK
(100 MHz)
x1
x1
PCI Express Bus
AMD
Hudson-M1
FCH
4 SATA 6Gb/s
8 USB 2.0/1.1
Dual BIOS
LPC
Bus
iTE
IT8720
PS/2 KB/Mouse
CODEC
Surround Speaker Out
Center/Subwoofer Speaker Out
Side Speaker Out
MIC
Line Out
Line In
S/PDIF Out

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

APU	◆ Built in with an AMD E-350 Dual-Core processor ◆ Built in with an AMD Radeon™ HD 6310 (DirectX 11) graphics core
Chipset	◆ AMD Hudson-M1 FCH
Memory	◆ 2 x 1.5V DDR3 DIMM sockets supporting up to 8 GB of system memory * Due to Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB. ◆ Single channel memory architecture ◆ Support for DDR3 1333 (O.C.)/1066 MHz memory modules (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard Graphics	◆ Integrated in the APU: - 1 x D-Sub port - 1 x DVI-D port, supporting a maximum resolution of 1920x1200 * The DVI-D port does not support D-Sub connection by adapter. - 1 x HDMI port, supporting a maximum resolution of 1920x1200
Audio	◆ Realtek ALC892 codec ◆ High Definition Audio ◆ 2/4/5.1/7.1-channel ◆ Support for Dolby® Home Theater ◆ Support for S/PDIF Out
LAN	◆ 1 x Realtek RTL8111E chip (10/100/1000 Mbit)
Expansion Slots	◆ 1 x PCI Express x16 slot, running at x4 (The PCIEX4 slot conforms to PCI Express 2.0 standard.)
Storage Interface	◆ FCH: - 4 x SATA 6Gb/s connectors supporting up to 4 SATA 6Gb/s devices
USB	◆ FCH: - Up to 8 USB 2.0/1.1 ports (4 on the back panel, 4 via the USB brackets connected to the internal USB headers) ◆ Renesas D720200 chip: - Up to 2 USB 3.0/2.0 ports on the back panel

Internal Connectors	◆ 1 x 24-pin ATX main power connector ◆ 1 x 4-pin ATX 12V power connector ◆ 4 x SATA 6Gb/s connectors ◆ 1 x CPU fan header ◆ 1 x system fan header ◆ 1 x front panel header ◆ 1 x front panel audio header ◆ 1 x S/PDIF Out header ◆ 2 x USB 2.0/1.1 headers ◆ 1 x debug card header * This port is mainly used by repair technicians for debugging and problem diagnosis. ◆ 1 x chassis intrusion header ◆ 1 x power LED header ◆ 1 x clearing CMOS jumper
Back Panel Connectors	◆ 1 x PS/2 keyboard/mouse port ◆ 1 x D-Sub port ◆ 1 x DVI-D port ◆ 1 x optical S/PDIF Out connector ◆ 1 x HDMI port ◆ 4 x USB 2.0/1.1 ports ◆ 2 x USB 3.0/2.0 ports ◆ 1 x RJ-45 port ◆ 6 x audio jacks (Center/Subwoofer Speaker Out/Rear Speaker Out/Side Speaker Out/Line In/Line Out/Microphone)
I/O Controller	◆ iTE IT8720 chip
Hardware Monitor	◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed detection
BIOS	◆ 2 x 16 Mbit flash ◆ Use of licensed AWARD BIOS ◆ Support for DualBIOS™ ◆ PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b

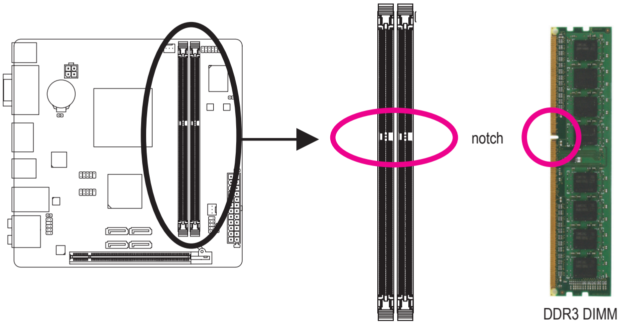
Unique Features	◆ Support for @BIOS ◆ Support for Q-Flash ◆ Support for Xpress BIOS Rescue ◆ Support for Download Center ◆ Support for Xpress Install ◆ Support for Xpress Recovery2 ◆ Support for EasyTune * Available functions in EasyTune may differ by motherboard model. ◆ Support for Smart Recovery ◆ Support for Auto Green ◆ Support for ON/OFF Charge ◆ Support for Q-Share
Bundled Software	◆ Norton Internet Security (OEM version)
Operating System	◆ Support for Microsoft® Windows 7/Vista/XP
Form Factor	◆ Mini-ITX Form Factor; 17.0cm x 17.0cm

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

1-3 Installing the Memory

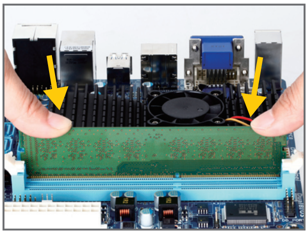
Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

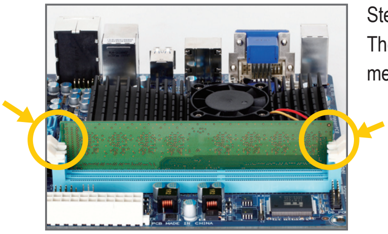


Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.
DDR3 and DDR2 DIMMs are not compatible to each other or DDR DIMMs. Be sure to install DDR3 DIMMs on this motherboard.

A DDR3 memory module has a notch, so it can only fit in one direction. Follow the steps below to correctly install your memory modules in the memory sockets.



Step 1:
Note the orientation of the memory module. Spread the retaining clips at both ends of the memory socket. Place the memory module on the socket. As indicated in the picture on the left, place your fingers on the top edge of the memory, push down on the memory and insert it vertically into the memory socket.

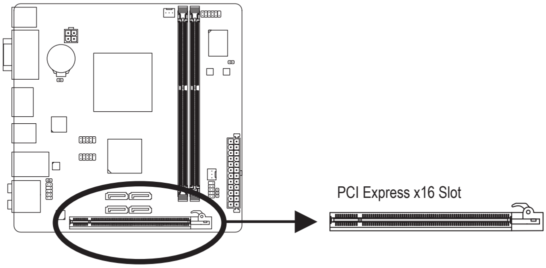


Step 2:
The clips at both ends of the socket will snap into place when the memory module is securely inserted.

1-4 Installing an Expansion Card

Read the following guidelines before you begin to install an expansion card:

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.

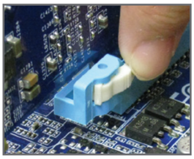


Follow the steps below to correctly install your expansion card in the expansion slot.

1. Locate an expansion slot that supports your card. Remove the metal slot cover from the chassis back panel.
2. Align the card with the slot, and press down on the card until it is fully seated in the slot.
3. Make sure the metal contacts on the card are completely inserted into the slot.
4. Secure the card's metal bracket to the chassis back panel with a screw.
5. After installing all expansion cards, replace the chassis cover(s).
6. Turn on your computer. If necessary, go to BIOS Setup to make any required BIOS changes for your expansion card(s).
7. Install the driver provided with the expansion card in your operating system.

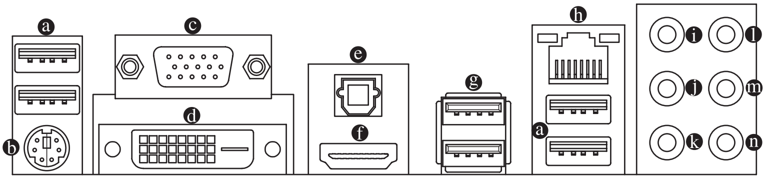
Example: Installing and Removing a PCI Express Graphics Card:

- Installing a Graphics Card:
  Gently push down on the top edge of the card until it is fully inserted into the PCI Express slot. Make sure the card is securely seated in the slot and does not rock.



- Removing the Card:
  Press the latch at the end of the PCI Express slot to release the card and then pull the card straight up from the slot.

1-5 Back Panel Connectors



ⓐ USB 2.0/1.1 Port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

ⓑ PS/2 Keyboard/Mouse Port

Use this port to connect a PS/2 mouse or keyboard.

ⓒ D-Sub Port

The D-Sub port supports a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port.

ⓓ DVI-D Port (Note)

The DVI-D port conforms to the DVI-D specification and supports a maximum resolution of 1920x1200 (the actual resolutions supported depend on the monitor being used). Connect a monitor that supports DVI-D connection to this port.

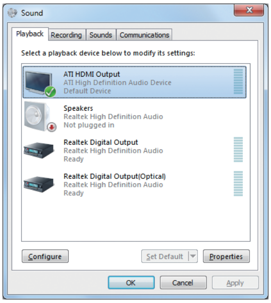
ⓔ Optical S/PDIF Out Connector

This connector provides digital audio out to an external audio system that supports digital optical audio. Before using this feature, ensure that your audio system provides an optical digital audio in connector.

ⓕ HDMI Port

The HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port. The HDMI Technology can support a maximum resolution of 1920x1200 but the actual resolutions supported depend on the monitor being used.

- After installing the HDMI device, make sure to set it as the default sound playback device. (The actual item may differ by operating system. See the following screenshot for reference.) Then go to BIOS Setup and set **Onboard VGA output connect** under **Advanced BIOS Features** to **D-SUB/HDMI**.
- Please note the HDMI audio output only supports AC3, DTS and 2-channel-LPCM formats. (AC3 and DTS require the use of an external decoder for decoding.)



Select a playback device below to modify its settings:

ATI HDMI Output
ATI High Definition Audio Device
Default Device

Speakers
Realtek High Definition Audio
Not plugged in

Realtek Digital Output
Realtek High Definition Audio
Ready

Realtek Digital Output(Optical)
Realtek High Definition Audio
Ready

In Windows 7, select Start>Control Panel>Hardware and Sound>Sound>Playback, set **ATI HDMI Output** to the default playback device.

(Note) The DVI-D port does not support D-Sub connection by adapter.

A. Dual Display Configurations:

This motherboard provides three ports for video output: DVI-D, HDMI and D-Sub. The table below shows the supported dual display configurations.

Dual Display	Combination	Supported or Not
	DVI-D + D-Sub	Yes
	DVI-D + HDMI	Yes
	HDMI + D-Sub	Yes

B. Playback of HD DVD and Blu-ray Discs:

In order to get better playback quality, when playing the HD DVD or Blu-ray discs, refer to the recommended system requirements (or better) below.

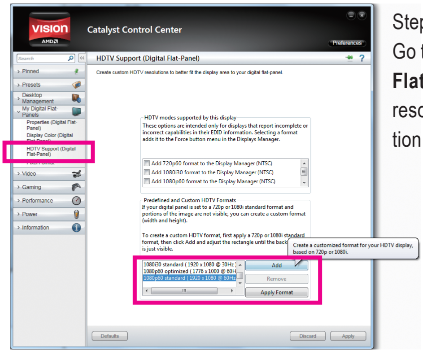
- Memory: Two 1 GB DDR3 1066 memory modules
- BIOS Setup: At least 256 MB of UMA Frame Buffer Size (refer to Chapter 2, "BIOS Setup," "Advanced BIOS Features," for more information)
- Playback software: CyberLink PowerDVD 8.0 or later (Note: Please ensure Hardware Acceleration is enabled.)
- HDCP compliant monitor(s)

C. Configuring Screen Resolution

After installing the chipset driver, if your desktop screen is wider than your monitor, refer to the following to set the screen resolution.

Step 1:

Right-click on your desktop and select **Catalyst Control Center**. On the top right corner of the **Catalyst Control Center** UI, select **Preferences** and select **Advanced View.**


VISION
AMD
Catalyst Control Center
Preferences
Search
Pinned
Presets
Desktop Management
My Digital Flat-Panels
Properties (Digital Flat-Panel)
Display Color (Digital Flat-Panel)
HDTV Support (Digital Flat-Panel)
Video
Gaming
Performance
Power
Information
HDTV Support (Digital Flat-Panel)
Add
Remove
Apply Format
Defaults
Discard
Apply

Create custom HDTV resolutions to better fit the display area to your digital flat-panel.

HDTV modes supported by this display

These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.

☐ Add 720p60 format to the Display Manager (NTSC)
☐ Add 1080i30 format to the Display Manager (NTSC)
☐ Add 1080p60 format to the Display Manager (NTSC)

Predefined and Custom HDTV Formats

If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).

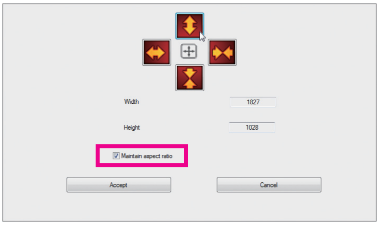
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the back is just visible.

Create a customized format for your HDTV display, based on 720p or 1080i.

1080i30 standard (1920 x 1080 @ 30Hz
1080p60 optimized (1776 x 1000 @ 60H
1080p60 standard (1920 x 1080 @ 60Hz

Step 2:

Go to **My Digital Flat-Panels>HDTV Support (Digital Flat-Panel)**. At the bottom of the screen, select the resolution that is most closest to your screen resolution from the resolution selection list and click **Add**.


Accept
Cancel

Width 1827

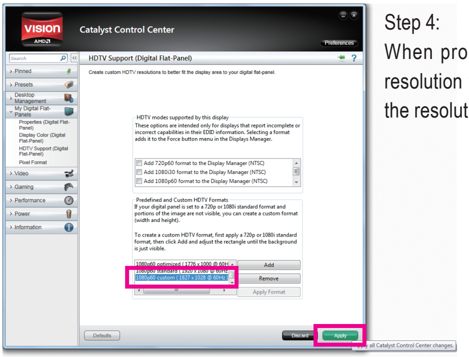
Height 1028

☑ Maintain aspect ratio

Step 3:

When a screen similar to that on the left appears, make sure **Maintain aspect ratio** is selected. Then use the arrows to adjust the custom screen resolution till it fits your monitor. Finally, click **Accept**.

Step 4:
When prompted to confirm, click **OK.** The custom resolution you defined will appear on the list. To keep the resolution on the list, click **Apply**.


Catalyst Control Center
Preferences
Search
Pinned
Presets
Desktop Management
My Digital Flat-Panels
Properties (Digital Flat-Panel)
Display Color (Digital Flat-Panel)
HDTV Support (Digital Flat-Panel)
Pixel Format
Video
Gaming
Performance
Power
Information
Add
Remove
Apply Format
Defaults
Discard
Apply

HDTV Support (Digital Flat-Panel)

Create custom HDTV resolutions to better fit the display area to your digital flat-panel.

HDTV modes supported by this display

These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.

☐ Add 720p60 format to the Display Manager (NTSC)
☐ Add 1080i30 format to the Display Manager (NTSC)
☐ Add 1080p60 format to the Display Manager (NTSC)

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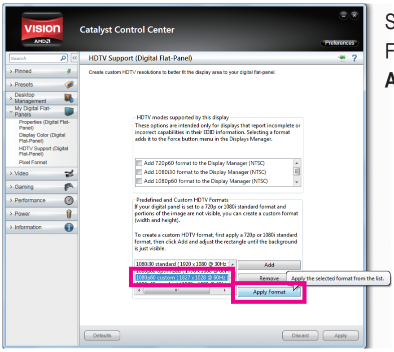
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.

1080p60 optimized (1776 x 1000 @ 60H
1080p60 standard (1920 x 1080 @ 60Hz
1080p60 custom (1827 x 1028 @ 60Hz)

Apply all Catalyst Control Center changes.

Step 5:
From the list, select the custom resolution and click **Apply Format** to complete.


Catalyst Control Center
Preferences
Search
Pinned
Presets
Desktop Management
My Digital Flat-Panels
Properties (Digital Flat-Panel)
Display Color (Digital Flat-Panel)
HDTV Support (Digital Flat-Panel)
Pixel Format
Video
Gaming
Performance
Power
Information
Add
Remove
Apply Format
Defaults
Discard
Apply

HDTV Support (Digital Flat-Panel)

Create custom HDTV resolutions to better fit the display area to your digital flat-panel.

HDTV modes supported by this display

These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.

☐ Add 720p60 format to the Display Manager (NTSC)
☐ Add 1080i30 format to the Display Manager (NTSC)
☐ Add 1080p60 format to the Display Manager (NTSC)

Predefined and Custom HDTV Formats

If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).

To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.

1080i30 standard (1920 x 1080 @ 30Hz)
1080p60 optimized (1776 x 1000 @ 60H
1080p60 custom (1827 x 1028 @ 60Hz)

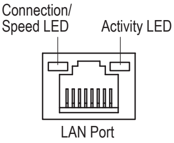
Apply the selected format from the list.

ⓖ USB 3.0/2.0 Port

The USB 3.0 port supports the USB 3.0 specification and is compatible to the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

ⓗ RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.


Connection/
Speed LED
Activity LED
LAN Port

Connection/Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

ⓘ **Center/Subwoofer Speaker Out Jack (Orange)**

Use this audio jack to connect center/subwoofer speakers in a 5.1/7.1-channel audio configuration.

ⓙ **Rear Speaker Out Jack (Black)**

Use this audio jack to connect rear speakers in a 7.1-channel audio configuration.

ⓚ **Side Speaker Out Jack (Gray)**

Use this audio jack to connect side speakers in a 4/5.1/7.1-channel audio configuration.

ⓛ **Line In Jack (Blue)**

The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

ⓜ **Line Out Jack (Green)**

The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

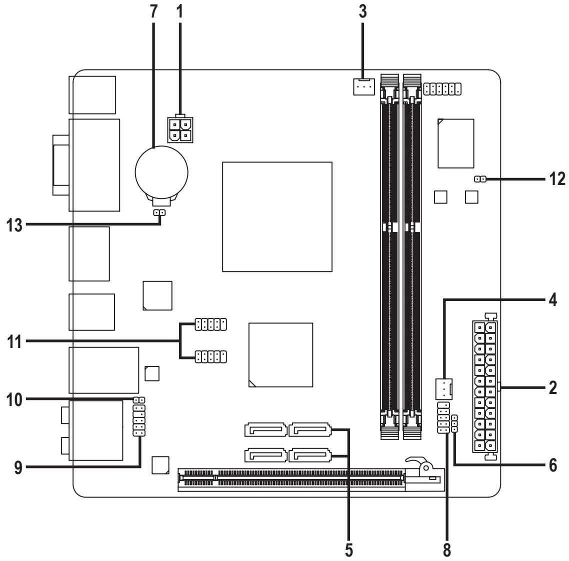
ⓝ **Mic In Jack (Pink)**

The default Mic in jack. Microphones must be connected to this jack.

In addition to the default speakers settings, the ⓘ ~ ⓝ audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic in jack (ⓝ). Refer to the instructions on setting up a 2/4/5.1/7.1-channel audio configuration in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."

- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-6 Internal Connectors



1)	ATX_12V	8)	F_PANEL
2)	ATX	9)	F_AUDIO
3)	CPU_FAN	10)	SPDIF_O
4)	SYS_FAN	11)	F_USB1/F_USB2
5)	SATA3_0/1/2/3	12)	CI
6)	PWR_LED	13)	CLR_CMOS
7)	BAT		

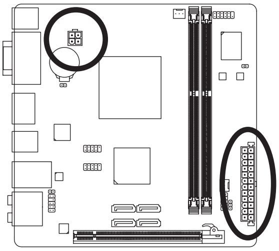
Read the following guidelines before connecting external devices:

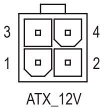
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

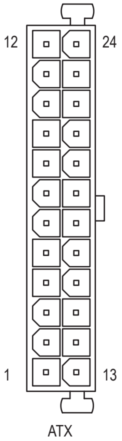
To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (200W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.





ATX_12V:

Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

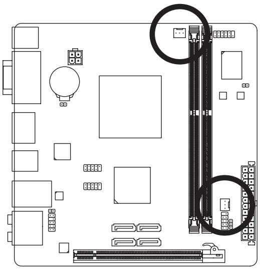


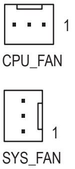
ATX:

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON (soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX)

3/4) CPU_FAN/SYS_FAN (Fan Headers)

The motherboard has a 3-pin CPU fan header (CPU_FAN), a 3-pin system fan header (SYS_FAN). Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.





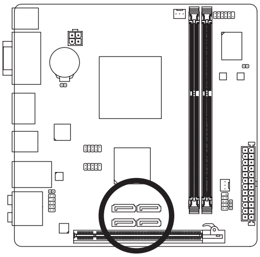
CPU_FAN/SYS_FAN:

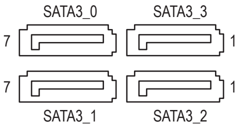
Pin No.	Definition
1	GND
2	+12V
3	Sense

- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

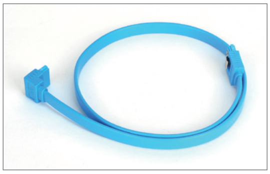
5) SATA3_0/1/2/3 (SATA 6Gb/s Connectors)

The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device.





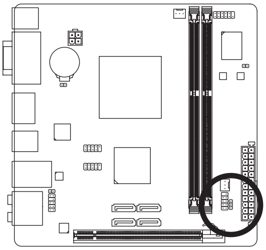
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

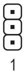


Please connect the L-shaped end of the SATA cable to your SATA hard drive.

6) PWR_LED (System Power LED Header)

This header can be used to connect a system power LED on the chassis to indicate system power status. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep state or powered off (S5).



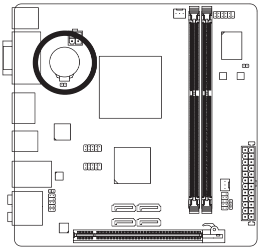


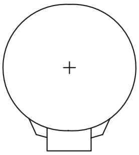
Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

System Status	LED
S0	On
S3/S4/S5	Off

7) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.





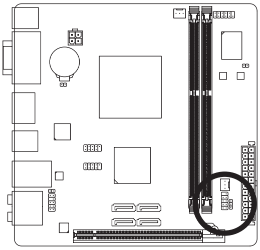
You may clear the CMOS values by removing the battery:

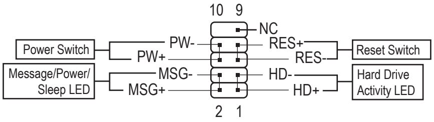
1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

8) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.





- **MSG** (Message/Power/Sleep LED, Yellow):

System Status	LED
S0	On
S3/S4/S5	Off

Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

- **PW** (Power Switch, Red):
  Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management Setup," for more information).

- **HD** (Hard Drive Activity LED, Blue)
  Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

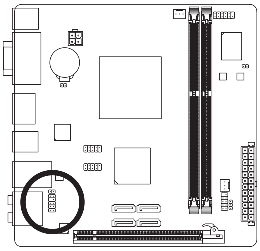
- **RES** (Reset Switch, Green):
  Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

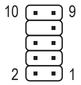
- **NC** (Purple):
  No connection.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

9) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.





For HD Front Panel Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	GND
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	GND

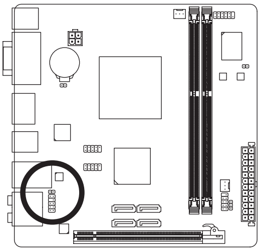
For AC'97 Front Panel Audio:

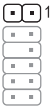
Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC

- The front panel audio header supports HD audio by default. If your chassis provides an AC'97 front panel audio module, refer to the instructions on how to activate AC'97 functionality via the audio software in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

10) SPDIF_O (S/PDIF Out Header)

This header supports digital S/PDIF Out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards. For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time. For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card.

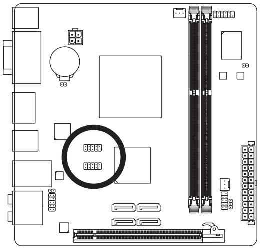


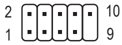


Pin No.	Definition
1	SPDIFO
2	GND

11) F_USB1/F_USB2 (USB 2.0/1.1 Headers)

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.





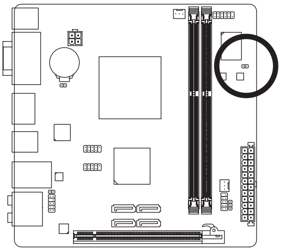
Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC

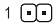
When the system is in S4/S5 mode, only the USB ports routed to the F_USB1 header can support the ON/OFF Charge function.

- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB 2.0/1.1 header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

12) CI (Chassis Intrusion Header)

This motherboard provides a chassis detection feature that detects if the chassis cover has been removed. This function requires a chassis with chassis intrusion detection design.

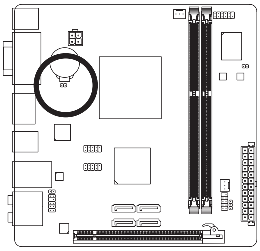




Pin No.	Definition
1	Signal
2	GND

13) CLR_CMOS (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



☐☐ Open: Normal

■■ Short: Clear CMOS Values

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup to load factory defaults (select Load Optimized Defaults) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.

To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility.

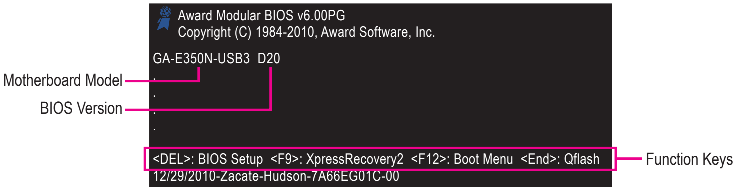
- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS.

For instructions on using the Q-Flash and @BIOS utilities, refer to Chapter 4, "BIOS Update Utilities."

- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- BIOS will emit a beep code during the POST. Refer to Chapter 5, "Troubleshooting," for the beep codes description.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

2-1 Startup Screen

The following screens may appear when the computer boots.



```
Award Modular BIOS v6.00PG
Copyright (C) 1984-2010, Award Software, Inc.

GA-E350N-USB3  D20
.
.
.
.

<DEL>: BIOS Setup  <F9>: XpressRecovery2  <F12>: Boot Menu  <End>: Qflash
12/29/2010-Zacate-Hudson-7A66EG01C-00
```

Function Keys:

<DEL>: BIOS SETUP\Q-FLASH

Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup.

<F9>: XPRESS RECOVERY2

If you have ever entered Xpress Recovery2 to back up hard drive data using the driver disk, the <F9> key can be used for subsequent access to Xpress Recovery2 during the POST. For more information, refer to Chapter 4, "Xpress Recovery2."

<F12>: BOOT MENU

Boot Menu allows you to set the first boot device without entering BIOS Setup. In Boot Menu, use the up arrow key <↑> or the down arrow key <↓> to select the first boot device, then press <Enter> to accept. To exit Boot Menu, press <Esc>. The system will directly boot from the device configured in Boot Menu.

Note: The setting in Boot Menu is effective for one time only. After system restart, the device boot order will still be based on BIOS Setup settings. You can access Boot Menu again to change the first boot device setting as needed.

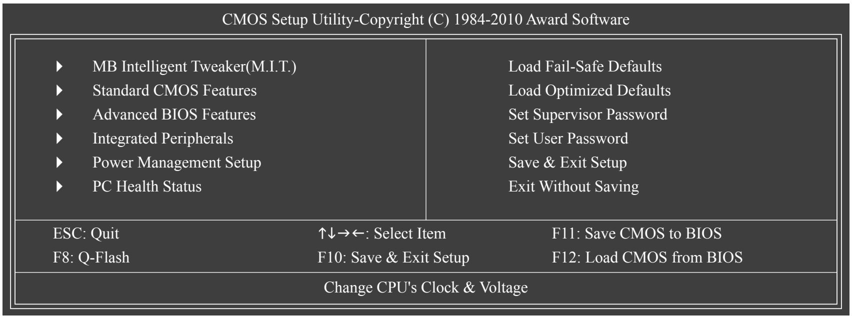
<END>: Q-FLASH

Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first.

2-2 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter a sub-menu.

(Sample BIOS Version: D20)



```
                CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

   ▶  MB Intelligent Tweaker(M.I.T.)          Load Fail-Safe Defaults
   ▶  Standard CMOS Features                  Load Optimized Defaults
   ▶  Advanced BIOS Features                  Set Supervisor Password
   ▶  Integrated Peripherals                  Set User Password
   ▶  Power Management Setup                  Save & Exit Setup
   ▶  PC Health Status                        Exit Without Saving

 ESC: Quit                ↑↓→←: Select Item          F11: Save CMOS to BIOS
 F8: Q-Flash              F10: Save & Exit Setup     F12: Load CMOS from BIOS

                          Change CPU's Clock & Voltage
```

BIOS Setup Program Function Keys

<↑><↓><←><→>	Move the selection bar to select an item
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F2>	Move cursor to the Item Help block on the right (submenus only)
<F5>	Restore the previous BIOS settings for the current submenus
<F6>	Load the Fail-Safe BIOS default settings for the current submenus
<F7>	Load the Optimized BIOS default settings for the current submenus
<F8>	Access the Q-Flash utility
<F9>	Display system information
<F10>	Save all the changes and exit the BIOS Setup program
<F11>	Save CMOS to BIOS
<F12>	Load CMOS from BIOS

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options.
- When the system is not stable as usual, select the **Load Optimized Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

The Functions of the <F11> and <F12> keys (For the Main Menu Only)

F11: Save CMOS to BIOS

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles (Profile 1-8) and name each profile. First enter the profile name (to erase the default profile name, use the SPACE key) and then press <Enter> to complete.

F12: Load CMOS from BIOS

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load, then press <Enter> to complete.

MB Intelligent Tweaker(M.I.T.)

Use this menu to configure the clock, frequency and voltages of your CPU, memory, etc.

Standard CMOS Features

Use this menu to configure the system time and date, hard drive types, and the type of errors that stop the system boot, etc.

Advanced BIOS Features

Use this menu to configure the device boot order, advanced features available on the CPU, and the primary display adapter.

Integrated Peripherals

Use this menu to configure all peripheral devices, such as SATA, USB, integrated audio, and integrated LAN, etc.

Power Management Setup

Use this menu to configure all the power-saving functions.

PC Health Status

Use this menu to see information about autodetected system/CPU temperature, system voltage and fan speed, etc.

Load Fail-Safe Defaults

Fail-Safe defaults are factory settings for the most stable, minimal-performance system operations.

Load Optimized Defaults

Optimized defaults are factory settings for optimal-performance system operations.

Set Supervisor Password

Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

Set User Password

Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

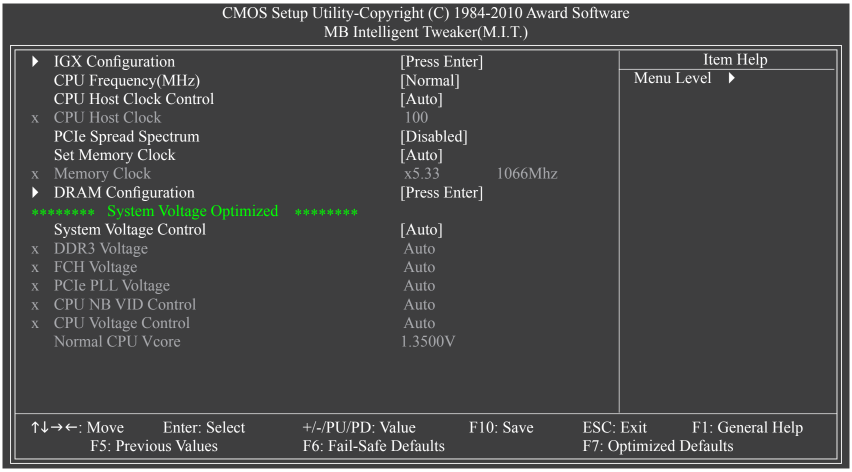
Save & Exit Setup

Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Exit Without Saving

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

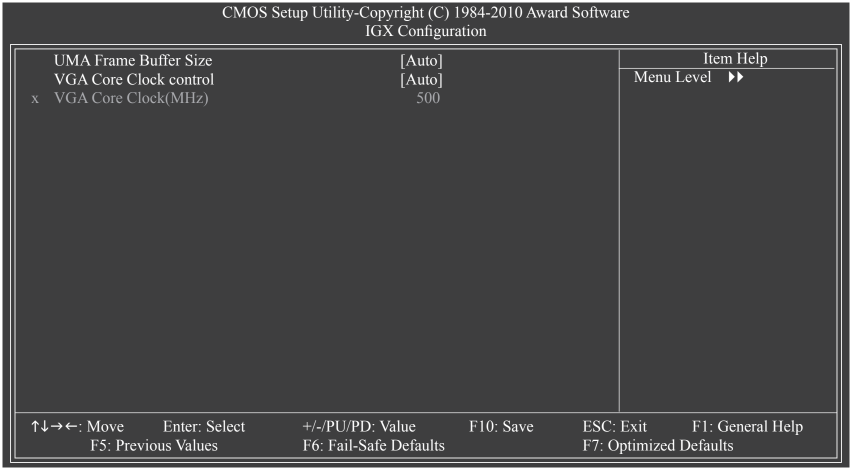
2-3 MB Intelligent Tweaker(M.I.T.)



```
              CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                          MB Intelligent Tweaker(M.I.T.)

 ▶  IGX Configuration                [Press Enter]             Item Help
    CPU Frequency(MHz)               [Normal]              Menu Level  ▶
    CPU Host Clock Control           [Auto]
 x  CPU Host Clock                    100
    PCIe Spread Spectrum             [Disabled]
    Set Memory Clock                 [Auto]
 x  Memory Clock                      x5.33      1066Mhz
 ▶  DRAM Configuration               [Press Enter]
 ********  System Voltage Optimized   ********
    System Voltage Control           [Auto]
 x  DDR3 Voltage                      Auto
 x  FCH Voltage                       Auto
 x  PCIe PLL Voltage                  Auto
 x  CPU NB VID Control                Auto
 x  CPU Voltage Control               Auto
    Normal CPU Vcore                 1.3500V

 ↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
       F5: Previous Values      F6: Fail-Safe Defaults           F7: Optimized Defaults
```

- Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)
- When the **System Voltage Optimized** item blinks in red, it is recommended that you set the **System Voltage Control** item to **Auto** to optimize the system voltage settings.

☞ IGX Configuration



```
              CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                               IGX Configuration

    UMA Frame Buffer Size            [Auto]                    Item Help
    VGA Core Clock control           [Auto]                Menu Level  ▶▶
 x  VGA Core Clock(MHz)                500

 ↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
       F5: Previous Values      F6: Fail-Safe Defaults           F7: Optimized Defaults
```

☞ UMA Frame Buffer Size

Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display. Options are: Auto (default), 256MB, 512MB, 1024MB.

VGA Core Clock control

Allows you to determine whether to manually set the VGA Core clock. (Default: Auto)

VGA Core Clock(MHz)

Allows you to manually set the VGA Core clock. The adjustable range is from 300 MHz to 2000 MHz. This item is configurable only when the **VGA Core Clock control** option is set to **Manual**.

CPU Frequency(MHz)

Allows you to manually set the CPU host frequency. The adjustable range is from 1600 MHz to 2360 MHz. (Default: Normal)

CPU Host Clock Control

Enables or disables the control of CPU host clock. (Default: Auto)

Note: If your system fails to boot after overclocking, please wait for 20 seconds to allow for automated system reboot, or clear the CMOS values to reset the board to default values.

CPU Host Clock

Allows you to manually set the CPU host clock. The adjustable range is from 100 MHz to 120 MHz. This item is configurable only when **CPU Host Clock Control** is set to **Manual**.

PCIe Spread Spectrum

Enables or disables PCIe Spread Spectrum. (Default: Disabled)

Set Memory Clock

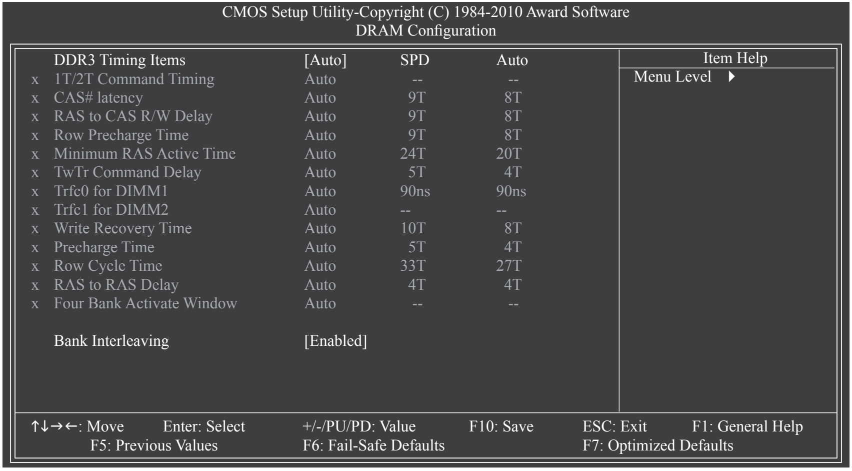
Determines whether to manually set the memory clock. **Auto** lets BIOS automatically set the memory clock as required. **Manual** allows the memory clock control item below to be configurable. (Default: Auto)

Memory Clock

This option is configurable only when **Set Memory Clock** is set to **Manual**.

►► X4.00	Sets Memory Clock to X4.00.
►► X5.33	Sets Memory Clock to X5.33.
►► X6.66	Sets Memory Clock to X6.66.

DRAM Configuration



```
                 CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                                  DRAM Configuration

    DDR3 Timing Items              [Auto]     SPD      Auto          Item Help
 x  1T/2T Command Timing           Auto       --       --        Menu Level  ▸
 x  CAS# latency                   Auto        9T       8T
 x  RAS to CAS R/W Delay           Auto        9T       8T
 x  Row Precharge Time             Auto        9T       8T
 x  Minimum RAS Active Time        Auto       24T      20T
 x  TwTr Command Delay             Auto        5T       4T
 x  Trfc0 for DIMM1                Auto       90ns     90ns
 x  Trfc1 for DIMM2                Auto       --       --
 x  Write Recovery Time            Auto       10T       8T
 x  Precharge Time                 Auto        5T       4T
 x  Row Cycle Time                 Auto       33T      27T
 x  RAS to RAS Delay               Auto        4T       4T
 x  Four Bank Activate Window      Auto       --       --

    Bank Interleaving              [Enabled]

↑↓→←: Move     Enter: Select     +/-/PU/PD: Value     F10: Save     ESC: Exit     F1: General Help
         F5: Previous Values     F6: Fail-Safe Defaults             F7: Optimized Defaults
```

DDR3 Timing Items

Manual allows all DDR3 Timing items below to be configurable.

Options are: Auto (default), Manual.

1T/2T Command Timing

Options are: Auto (default), 1T, 2T.

CAS# latency

Options are: Auto (default), 5T~14T.

RAS to CAS R/W Delay

Options are: Auto (default), 5T~14T.

Row Precharge Time

Options are: Auto (default), 5T~14T.

Minimum RAS Active Time

Options are: Auto (default), 15T~36T.

TwTr Command Delay

Options are: Auto (default), 4T~8T.

Trfc0 for DIMM1

Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

Trfc2 for DIMM2

Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

Write Recovery Time

Options are: Auto (default), 5T~8T, 10T, 12T, 14T, 16T.

Precharge Time

Options are: Auto (default), 4T~8T.

Row Cycle Time

Options are: Auto (default), 20T~49T.

RAS to RAS Delay

Options are: Auto (default), 4T~8T.

Four Bank Activate Window

Options are: Auto (default), 16T~32T.

Bank Interleaving

Enables or disables memory bank interleaving. **Enabled** allows the system to simultaneously access different banks of the memory to increase memory performance and stability. (Default: Enabled)

******** System Voltage Optimized ********

System Voltage Control

Determines whether to manually set the system voltages. **Auto** lets the BIOS automatically set the system voltages as required. **Manual** allows all voltage control items below to be configurable. (Default: Auto)

DDR3 Voltage

Allows you to set memory voltage.

» Normal	Supplies the memory voltage as required. (Default)
» 1.200V ~ 2.100V	The adjustable range is from 1.200V to 2.100V.

Note: Increasing memory voltage may result in damage to the memory.

FCH Voltage

Allows you to set the FCH voltage.

» Normal	Supplies the FCH voltage as required. (Default)
» 1.100V ~ 1.600V	The adjustable range is from 1.100V to 1.600V.

PCIe PLL Voltage

Allows you to set the PCIe PLL voltage.

» Normal	Supplies the PCIe PLL voltage as required. (Default)
» 1.800V ~ 2.200V	The adjustable range is from 1.800 to 2.200V.

CPU NB VID Control

Allows you to set the CPU FCH VID voltage. **Auto** sets the CPU FCH VID voltage as required. (Default: Normal)

Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU.

CPU Voltage Control

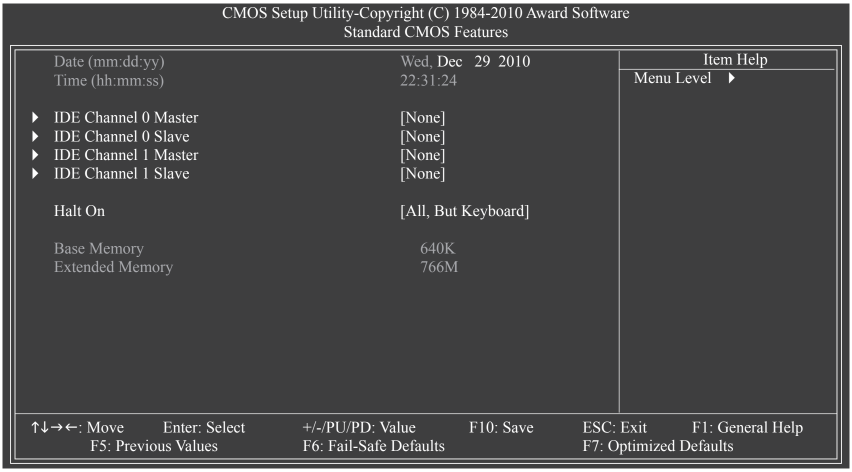
Allows you to set the CPU voltage. **Auto** sets the CPU voltage as required. (Default: Normal)

Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU.

Normal CPU Vcore

Displays the normal operating voltage of your CPU.

2-4 Standard CMOS Features



```
                 CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                                 Standard CMOS Features
     Date (mm:dd:yy)                        Wed, Dec  29  2010          Item Help
     Time (hh:mm:ss)                        22:31:24                  Menu Level   ▶

  ▶  IDE Channel 0 Master                   [None]
  ▶  IDE Channel 0 Slave                    [None]
  ▶  IDE Channel 1 Master                   [None]
  ▶  IDE Channel 1 Slave                    [None]

     Halt On                                [All, But Keyboard]

     Base Memory                               640K
     Extended Memory                           766M

 ↑↓→←: Move     Enter: Select      +/-/PU/PD: Value      F10: Save      ESC: Exit      F1: General Help
         F5: Previous Values       F6: Fail-Safe Defaults               F7: Optimized Defaults
```

☞ Date (mm:dd:yy)

Sets the system date. The date format is week (read-only), month, date and year. Select the desired field and use the up arrow or down arrow key to set the date.

☞ Time (hh:mm:ss)

Sets the system time. For example, 1 p.m. is 13:0:0. Select the desired field and use the up arrow or down arrow key to set the time.

☞ IDE Channel 0, 1 Master/Slave

» IDE HDD Auto-Detection

Press <Enter> to autodetect the parameters of the SATA device on this channel.

» IDE Channel 0, 1 Master/Slave

Configure your SATA devices by using one of the two methods below:

• Auto	Lets the BIOS automatically detect SATA devices during the POST. (Default)
• None	If no SATA devices are used, set this item to **None** so the system will skip the detection of the device during the POST for faster system startup.

» Access Mode — Sets the hard drive access mode. Options are: Auto (default), CHS, LBA, Large.

The following fields display your hard drive specifications. If you wish to enter the parameters manually, refer to the information on the hard drive.

» Capacity	Approximate capacity of the currently installed hard drive.
» Cylinder	Number of cylinders.
» Head	Number of heads.
» Precomp	Write precompensation cylinder.
» Landing Zone	Landing zone.
» Sector	Number of sectors.

Halt On

Allows you to determine whether the system will stop for an error during the POST.

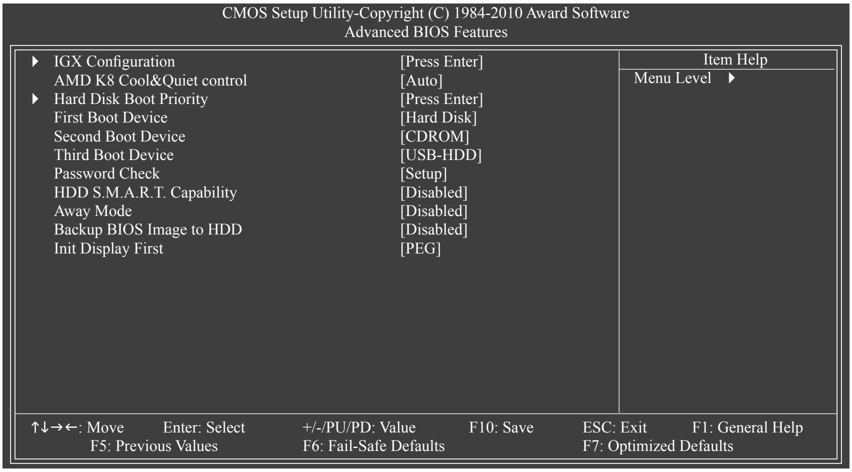
►► All Errors	Whenever the BIOS detects a non-fatal error the system boot will stop.
►► No Errors	The system boot will not stop for any error.
►► All, But Keyboard	The system boot will not stop for a keyboard error but stop for all other errors. (Default)

Memory

These fields are read-only and are determined by the BIOS POST.

►► Base Memory	Also called conventional memory. Typically, 640 KB will be reserved for the MS-DOS operating system.
►► Extended Memory	The amount of extended memory.

2-5 Advanced BIOS Features



```
                 CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                                  Advanced BIOS Features

 ▸ IGX Configuration                        [Press Enter]        Item Help
   AMD K8 Cool&Quiet control                [Auto]               Menu Level  ▸
 ▸ Hard Disk Boot Priority                  [Press Enter]
   First Boot Device                        [Hard Disk]
   Second Boot Device                       [CDROM]
   Third Boot Device                        [USB-HDD]
   Password Check                           [Setup]
   HDD S.M.A.R.T. Capability                [Disabled]
   Away Mode                                [Disabled]
   Backup BIOS Image to HDD                 [Disabled]
   Init Display First                       [PEG]

 ↑↓→←: Move    Enter: Select      +/-/PU/PD: Value     F10: Save    ESC: Exit      F1: General Help
       F5: Previous Values        F6: Fail-Safe Defaults            F7: Optimized Defaults
```

☞ IGX Configuration

The settings in this submenu are synchronous to those under the same items on the **MB Intelligent Tweaker(M.I.T.)** main menu.

☞ AMD K8 Cool&Quiet control

▸▸ Auto	Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VID to reduce heat output from your computer and its power consumption. (Default)
▸▸ Disabled	Disables this function.

☞ Hard Disk Boot Priority

Specifies the sequence of loading the operating system from the installed hard drives. Use the up or down arrow key to select a hard drive, then press the plus key <+> (or <PageUp>) or the minus key <-> (or <PageDown>) to move it up or down on the list. Press <Esc> to exit this menu when finished.

☞ First/Second/Third Boot Device

Specifies the boot order from the available devices. Use the up or down arrow key to select a device and press <Enter> to accept. Options are: Floppy, LS120, Hard Disk, CDROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Legacy LAN, Disabled.

☞ Password Check

Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the **Set Supervisor/User Password** item in the BIOS Main Menu.

▸▸ Setup	A password is only required for entering the BIOS Setup program. (Default)
▸▸ System	A password is required for booting the system and for entering the BIOS Setup program.

☞ HDD S.M.A.R.T. Capability

Enables or disables the S.M.A.R.T. (Self Monitoring and Reporting Technology) capability of your hard drive. This feature allows your system to report read/write errors of the hard drive and to issue warnings when a third party hardware monitor utility is installed. (Default: Enabled)

☞ **Away Mode**

Enables or disables Away Mode in Windows XP Media Center operating system. Away Mode allows the system to silently perform unattended tasks while in a low-power mode that appears off.
(Default: Disabled)

☞ **Backup BIOS Image to HDD**

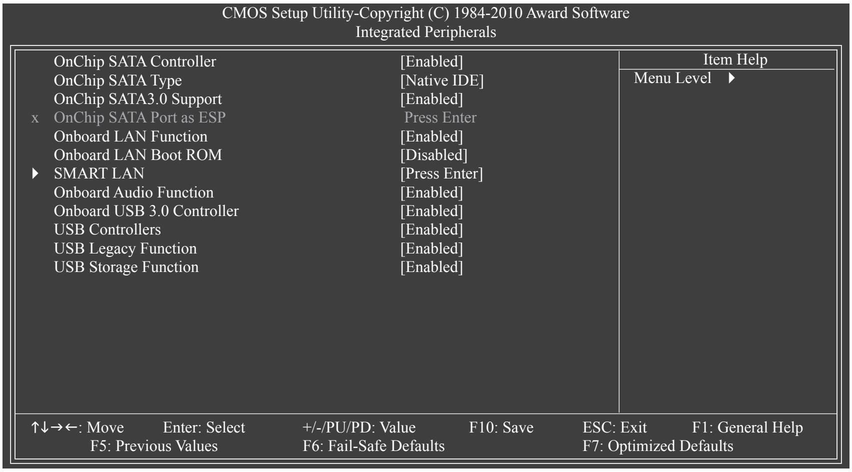
Allows the system to copy the BIOS image file to the hard drive. If the system BIOS is corrupted, it will be recovered from this image file. (Default: Disabled)

☞ **Init Display First**

Specifies the first initiation of the monitor display from the PCI Express graphics card or the onboard graphics.

⏩ Onboard	Sets the onboard graphics as the first display.
⏩ PEG	Sets the PCI Express graphics card as the first display. (Default)

2-6 Integrated Peripherals



```
CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Integrated Peripherals

   OnChip SATA Controller          [Enabled]        Item Help
   OnChip SATA Type                [Native IDE]     Menu Level  ▸
   OnChip SATA3.0 Support          [Enabled]
x  OnChip SATA Port as ESP          Press Enter
   Onboard LAN Function            [Enabled]
   Onboard LAN Boot ROM            [Disabled]
▸  SMART LAN                       [Press Enter]
   Onboard Audio Function          [Enabled]
   Onboard USB 3.0 Controller      [Enabled]
   USB Controllers                 [Enabled]
   USB Legacy Function             [Enabled]
   USB Storage Function            [Enabled]

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
      F5: Previous Values      F6: Fail-Safe Defaults            F7: Optimized Defaults
```

☞ OnChip SATA Controller

Enables or disables the integrated SATA controller. (Default: Enabled)

☞ OnChip SATA Type

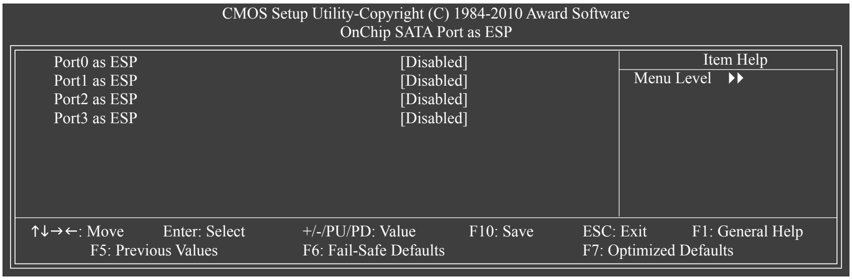
Configures the operating mode of the integrated SATA controller.

▸▸ Native IDE	Allows the SATA controller to operate in Native IDE mode. (Default) Enable Native IDE mode if you wish to install operating systems that support Native mode.
▸▸ AHCI	Configures the SATA controllers to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug.

☞ OnChip SATA3.0 Support

Enables or disables the SATA 6Gb/s function integrated in the FCH. When set to **Disabled**, the SATA controller will operate in SATA 3Gb/s mode. (Default: Enabled)

☞ OnChip SATA Port as ESP



```
CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
OnChip SATA Port as ESP

   Port0 as ESP                    [Disabled]       Item Help
   Port1 as ESP                    [Disabled]       Menu Level  ▸▸
   Port2 as ESP                    [Disabled]
   Port3 as ESP                    [Disabled]

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
      F5: Previous Values      F6: Fail-Safe Defaults            F7: Optimized Defaults
```

☞ Port0 as ESP/ Port1 as ESP/ Port2 as ESP/ Port3 as ESP

This option is configurable only when **OnChip SATA Type** is set to **AHCI**. **Enabled** will speed up the hot plug detection of the connected SATA device. (Default: Disabled)

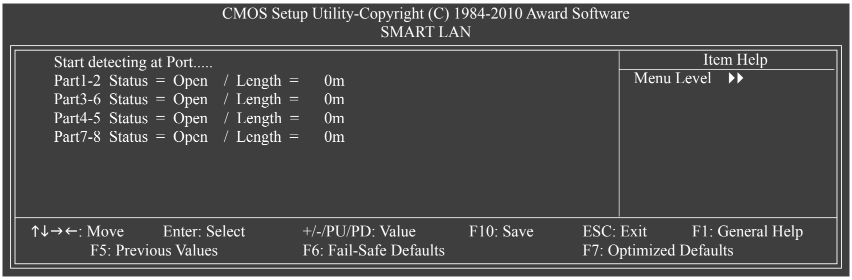
Onboard LAN Function

Enables or disables the onboard LAN function. (Default: Enabled) If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to Disabled.

Onboard LAN Boot ROM

Allows you to decide whether to activate the boot ROM integrated with the onboard LAN chip.
(Default: Disabled)

SMART LAN (LAN Cable Diagnostic Function)



```
              CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                                   SMART LAN

   Start detecting at Port.....                                   Item Help
   Part1-2  Status  =  Open   /  Length  =    0m            Menu Level   ▸▸
   Part3-6  Status  =  Open   /  Length  =    0m
   Part4-5  Status  =  Open   /  Length  =    0m
   Part7-8  Status  =  Open   /  Length  =    0m

↑↓→←: Move     Enter: Select       +/-/PU/PD: Value      F10: Save      ESC: Exit      F1: General Help
      F5: Previous Values           F6: Fail-Safe Defaults                F7: Optimized Defaults
```

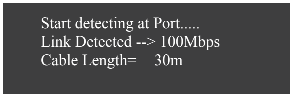
This motherboard incorporates cable diagnostic feature designed to detect the status of the attached LAN cable. This feature will detect cabling issue and report the approximate distance to the fault or short. Refer to the following information for diagnosing your LAN cable:

When No LAN Cable Is Attached...

If no LAN cable is attached to the motherboard, the **Status** fields of all four pairs of wires will show **Open** and the **Length** fields show **0m**, as shown in the figure above.

When LAN Cable Is Functioning Normally...

If no cable problem is detected on the LAN cable connected to a Gigabit hub or a 10/100 Mbps hub, the following message will appear:



```
Start detecting at Port.....
Link Detected --> 100Mbps
Cable Length=    30m
```

▸▸ Link Detected	Displays transmission speed.
▸▸ Cable Length	Displays the approximate length of the attached LAN cable.

Note: The Gigabit hub will only operate at a speed of 10/100 Mbps in MS-DOS mode; it will operate at a normal speed of 10/100/1000 Mbps in Windows mode or when the LAN Boot ROM is activated.

When a Cable Problem Occurs...

If a cable problem occurs on a specified pair of wires, the **Status** field will show **Short** and then length shown will be the approximate distance to the fault or short.

Example: `Part1-2 Status = Short / Length  =  2m`

Explanation: A fault or short might occur at about 2m on Part 1-2.

Note: Part 4-5 and Part 7-8 are not used in a 10/100 Mbps environment, so their **Status** fields will show **Open**, and the length shown is the approximate length of the attached LAN cable.

☞ Onboard Audio Function

Enables or disables the onboard audio function. (Default: Enabled)
If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to **Disabled**.

☞ Onboard USB 3.0 Controller (Renesas D720200 USB Controller)

Enables or disables the Renesas D720200 USB controller. (Default: Enabled)

☞ USB Controllers

Enables or disables the integrated USB controllers. (Default: Enabled)
Disabled will turn off all of the USB functionalities below.

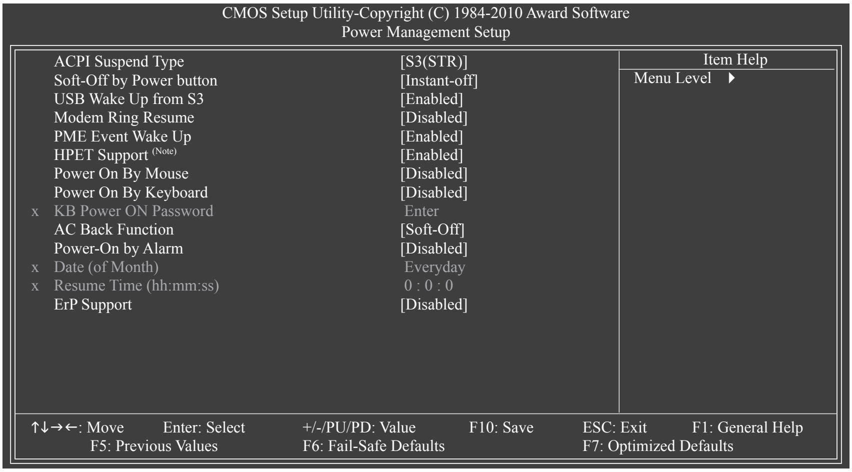
☞ USB Legacy Function

Allows USB keyboard to be used in MS-DOS. (Default: Enabled)

☞ USB Storage Function

Determines whether to detect USB storage devices, including USB flash drives and USB hard drives during the POST. (Default: Enabled)

2-7 Power Management Setup



```
          CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                         Power Management Setup

    ACPI Suspend Type                [S3(STR)]          Item Help
    Soft-Off by Power button         [Instant-off]     Menu Level  ▸
    USB Wake Up from S3              [Enabled]
    Modem Ring Resume                [Disabled]
    PME Event Wake Up                [Enabled]
    HPET Support (Note)              [Enabled]
    Power On By Mouse                [Disabled]
    Power On By Keyboard             [Disabled]
  x KB Power ON Password              Enter
    AC Back Function                 [Soft-Off]
    Power-On by Alarm                [Disabled]
  x Date (of Month)                   Everyday
  x Resume Time (hh:mm:ss)            0 : 0 : 0
    ErP Support                      [Disabled]

 ↑↓→←: Move   Enter: Select    +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
        F5: Previous Values     F6: Fail-Safe Defaults         F7: Optimized Defaults
```

☞ ACPI Suspend Type

Specifies the ACPI sleep state when the system enters suspend.

➤➤ S3(STR)	Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state. (Default)

☞ Soft-Off by Power button

Configures the way to turn off the computer in MS-DOS mode using the power button.

➤➤ Instant-Off	Press the power button and then the system will be turned off instantly. (Default)
➤➤ Delay 4 Sec.	Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

☞ USB Wake Up from S3

Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device. (Default: Enabled)

☞ Modem Ring Resume

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a modem that supports wake-up function. (Default: Disabled)

☞ PME Event Wake Up

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a PCI or PCIe device. Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead. (Default: Enabled)

☞ HPET Support (Note)

Enables or disables High Precision Event Timer (HPET) for Windows 7/Vista operating system.
(Default: Enabled)

(Note) Supported on Windows 7/Vista operating system only.

Power On By Mouse

Allows the system to be turned on by a PS/2 mouse wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

» Disabled	Disables this function. (Default)
» Double Click	Double click on left button on the PS/2 mouse to turn on the system.

Power On By Keyboard

Allows the system to be turned on by a PS/2 keyboard wake-up event.

Note: you need an ATX power supply providing at least 1A on the +5VSB lead.

» Disabled	Disables this function. (Default)
» Password	Set a password with 1~5 characters to turn on the system.
» Any KEY	Press any key on the keyboard to turn on the system.
» Keyboard 98	Press POWER button on the Windows 98 keyboard to turn on the system.

KB Power ON Password

Set the password when **Power On by Keyboard** is set to **Password**. Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

AC Back Function

Determines the state of the system after the return of power from an AC power loss.

» Soft-Off	The system stays off upon the return of the AC power. (Default)
» Full-On	The system is turned on upon the return of the AC power.
» Memory	The system returns to its last known awake state upon the return of the AC power.

Power-On by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled)

If enabled, set the date and time as following:

» Date (of Month): Turn on the system at a specific time on each day or on a specific day in a month.

» Resume Time (hh: mm: ss): Set the time at which the system will be powered on automatically.

Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

ErP Support

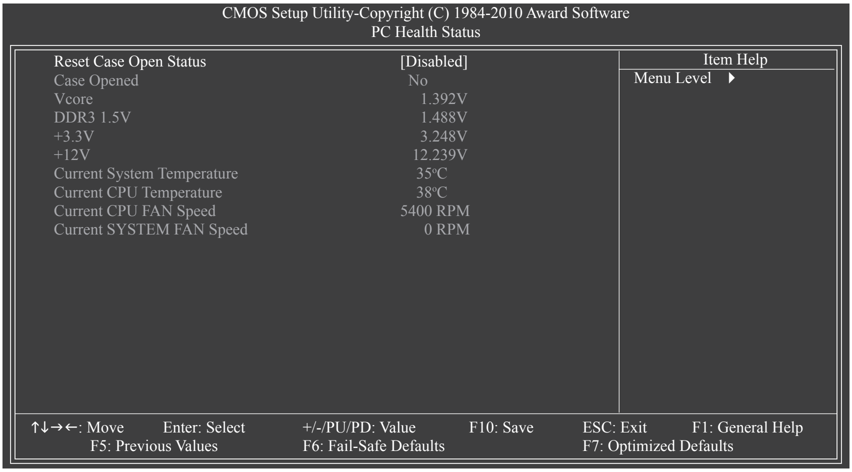
Determines whether to let the system consume less than 1W power in S5 (shutdown) state. (Default: Disabled)

Note: When this item is set to **Enabled**, the following four functions will become unavailable:

PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

(Note) Supported on Windows 7/Vista operating system only.

2-8 PC Health Status



```
CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
                    PC Health Status

 Reset Case Open Status            [Disabled]   |       Item Help
 Case Opened                         No         | Menu Level   ▶
 Vcore                                 1.392V   |
 DDR3 1.5V                             1.488V   |
 +3.3V                                 3.248V   |
 +12V                                 12.239V   |
 Current System Temperature           35ºC      |
 Current CPU Temperature              38ºC      |
 Current CPU FAN Speed              5400 RPM    |
 Current SYSTEM FAN Speed              0 RPM    |

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
      F5: Previous Values      F6: Fail-Safe Defaults           F7: Optimized Defaults
```

☞ Reset Case Open Status

Keeps or clears the record of previous chassis intrusion status. **Enabled** clears the record of previous chassis intrusion status and the **Case Opened** field will show "No" at next boot. (Default: Disabled)

☞ Case Opened

Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to the CMOS, and then restart your system.

☞ Current Voltage(V) Vcore/DDR3 1.5V/+3.3V/+12V

Displays the current system voltages.

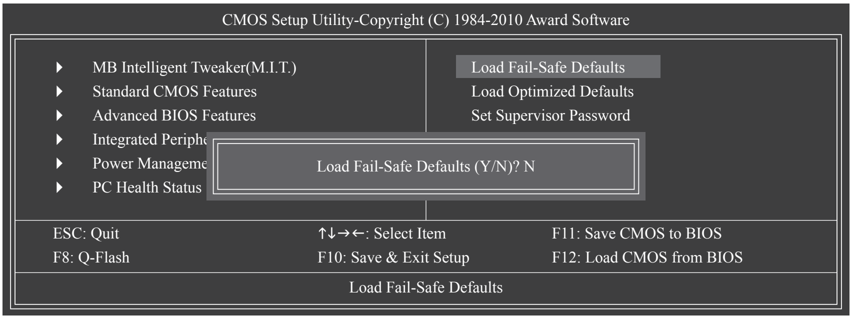
☞ Current System/CPU Temperature

Displays current system/CPU temperature.

☞ Current CPU/SYSTEM FAN Speed (RPM)

Displays current CPU/system fan speed.

2-9 Load Fail-Safe Defaults



CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

▸ MB Intelligent Tweaker(M.I.T.)
▸ Standard CMOS Features
▸ Advanced BIOS Features
▸ Integrated Periphe
▸ Power Manageme
▸ PC Health Status

Load Fail-Safe Defaults
Load Optimized Defaults
Set Supervisor Password

Load Fail-Safe Defaults (Y/N)? N

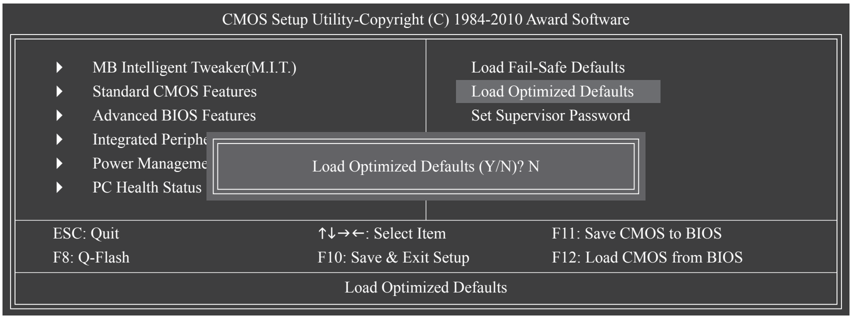
ESC: Quit
F8: Q-Flash
↑↓→←: Select Item
F10: Save & Exit Setup
F11: Save CMOS to BIOS
F12: Load CMOS from BIOS

Load Fail-Safe Defaults

Press <Enter> on this item and then press the <Y> key to load the safest BIOS default settings.

In case system instability occurs, you may try to load Fail-Safe defaults, which are the safest and most stable BIOS settings for the motherboard.

2-10 Load Optimized Defaults



CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

▸ MB Intelligent Tweaker(M.I.T.)
▸ Standard CMOS Features
▸ Advanced BIOS Features
▸ Integrated Periphe
▸ Power Manageme
▸ PC Health Status

Load Fail-Safe Defaults
Load Optimized Defaults
Set Supervisor Password

Load Optimized Defaults (Y/N)? N

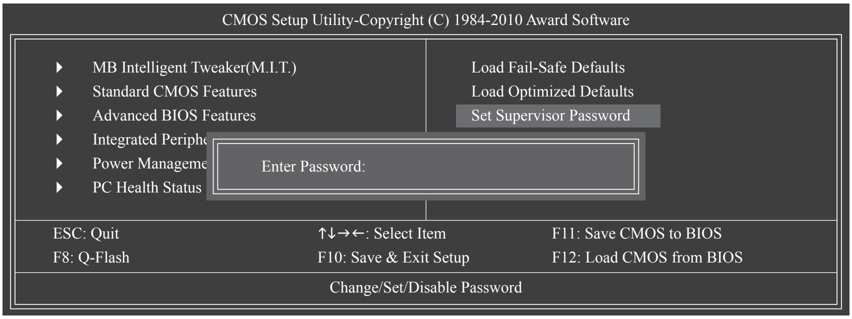
ESC: Quit
F8: Q-Flash
↑↓→←: Select Item
F10: Save & Exit Setup
F11: Save CMOS to BIOS
F12: Load CMOS from BIOS

Load Optimized Defaults

Press <Enter> on this item and then press the <Y> key to load the optimal BIOS default settings.

The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

2-11 Set Supervisor/User Password


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

MB Intelligent Tweaker(M.I.T.)
Standard CMOS Features
Advanced BIOS Features
Integrated Periphe
Power Manageme
PC Health Status
Load Fail-Safe Defaults
Load Optimized Defaults
Set Supervisor Password
ESC: Quit
F8: Q-Flash
↑↓→←: Select Item
F10: Save & Exit Setup
F11: Save CMOS to BIOS
F12: Load CMOS from BIOS

Enter Password:

Change/Set/Disable Password

Press <Enter> on this item and type the password with up to 8 characters and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>.

The BIOS Setup program allows you to specify two separate passwords:

☞ **Supervisor Password**

When a system password is set and the **Password Check** item in **Advanced BIOS Features** is set to **Setup**, you must enter the supervisor password for entering BIOS Setup and making BIOS changes.

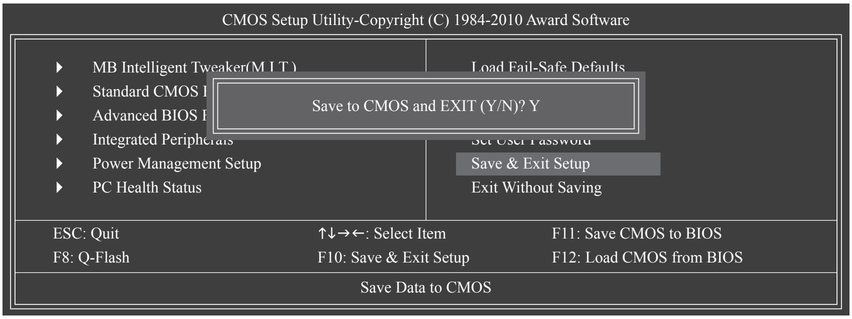
When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup and when entering BIOS Setup.

☞ **User Password**

When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup to continue system boot. In BIOS Setup, you must enter the supervisor password if you wish to make changes to BIOS settings. The user password only allows you to view the BIOS settings but not to make changes.

To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

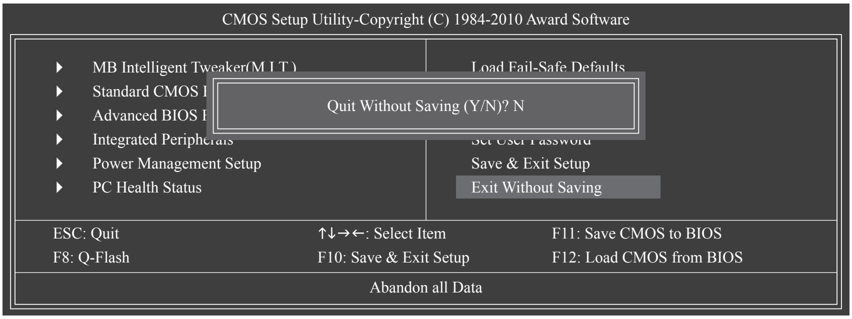
2-12 Save & Exit Setup



```
CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

▶ MB Intelligent Tweaker(M.I.T.)          Load Fail-Safe Defaults
▶ Standard CMOS I
▶ Advanced BIOS F      Save to CMOS and EXIT (Y/N)? Y
▶ Integrated Peripherals                  Set User Password
▶ Power Management Setup                  Save & Exit Setup
▶ PC Health Status                        Exit Without Saving

ESC: Quit          ↑↓→←: Select Item         F11: Save CMOS to BIOS
F8: Q-Flash        F10: Save & Exit Setup    F12: Load CMOS from BIOS

                        Save Data to CMOS
```

Press <Enter> on this item and press the <Y> key. This saves the changes to the CMOS and exits the BIOS Setup program. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

2-13 Exit Without Saving



```
CMOS Setup Utility-Copyright (C) 1984-2010 Award Software

▶ MB Intelligent Tweaker(M.I.T.)          Load Fail-Safe Defaults
▶ Standard CMOS I
▶ Advanced BIOS F      Quit Without Saving (Y/N)? N
▶ Integrated Peripherals                  Set User Password
▶ Power Management Setup                  Save & Exit Setup
▶ PC Health Status                        Exit Without Saving

ESC: Quit          ↑↓→←: Select Item         F11: Save CMOS to BIOS
F8: Q-Flash        F10: Save & Exit Setup    F12: Load CMOS from BIOS

                        Abandon all Data
```

Press <Enter> on this item and press the <Y> key. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

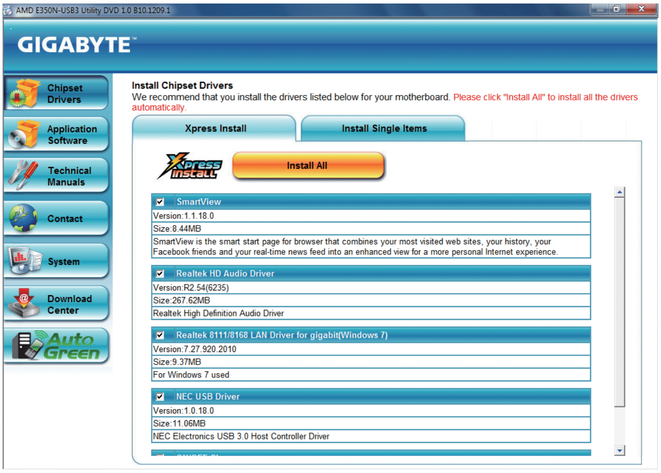
Chapter 3 Drivers Installation

- Before installing the drivers, first install the operating system.
- After installing the operating system, insert the motherboard driver disk into your optical drive. The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the **Run**.exe program.)

3-1 Installing Chipset Drivers

Now Loading Please wait...

After inserting the driver disk, "Xpress Install" will automatically scan your system and then list all the drivers that are recommended to install. You can click the **Install All** button and "Xpress Install" will install all the recommended drivers. Or click **Install Single Items** to manually select the drivers you wish to install.



Install Chipset Drivers

We recommend that you install the drivers listed below for your motherboard. Please click "Install All" to install all the drivers automatically.

☑ SmartView
Version:1.1.18.0
Size:8.44MB
SmartView is the smart start page for browser that combines your most visited web sites, your history, your Facebook friends and your real-time news feed into an enhanced view for a more personal Internet experience.

☑ Realtek HD Audio Driver
Version:R2.54(6235)
Size:267.62MB
Realtek High Definition Audio Driver

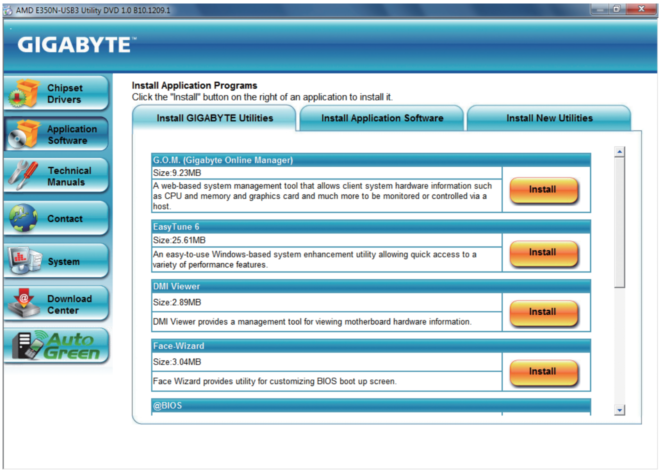
☑ Realtek 8111/8168 LAN Driver for gigabit(Windows 7)
Version:7.27.920.2010
Size:9.37MB
For Windows 7 used

☑ NEC USB Driver
Version:1.0.18.0
Size:11.06MB
NEC Electronics USB 3.0 Host Controller Driver

- Please ignore the popup dialog box(es) (e.g. the **Found New Hardware Wizard**) displayed when "Xpress Install" is installing the drivers. Failure to do so may affect the driver installation.
- Some device drivers will restart your system automatically during the driver installation. After the system restart, "Xpress Install" will continue to install other drivers.
- After "Xpress Install" installs all of the drivers, a dialog box will appear asking whether to install new GIGABYTE utilities. Click **Yes** to automatically install the utilities. Or click **No** if you want to manually select the utilities to install on the **Application Software** page later.
- For USB 2.0 driver support under the Windows XP operating system, please install the Windows XP Service Pack 1 or later. After installing the SP1 (or later), if a question mark still exists in **Universal Serial Bus Controller** in **Device Manager**, please remove the question mark (by right-clicking your mouse and select **Uninstall**) and restart the system. (The system will then autodetect and install the USB 2.0 driver.)

3-2 Application Software

This page displays all the utilities and applications that GIGABYTE develops and some free software. You can click the **Install** button on the right of an item to install it.


AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Install GIGABYTE Utilities
Install Application Software
Install New Utilities
Install
Install
Install
Install

Install Application Programs

Click the "Install" button on the right of an application to install it.

G.O.M. (Gigabyte Online Manager)
Size:9.23MB
A web-based system management tool that allows client system hardware information such as CPU and memory and graphics card and much more to be monitored or controlled via a host.

EasyTune 6
Size:25.61MB
An easy-to-use Windows-based system enhancement utility allowing quick access to a variety of performance features.

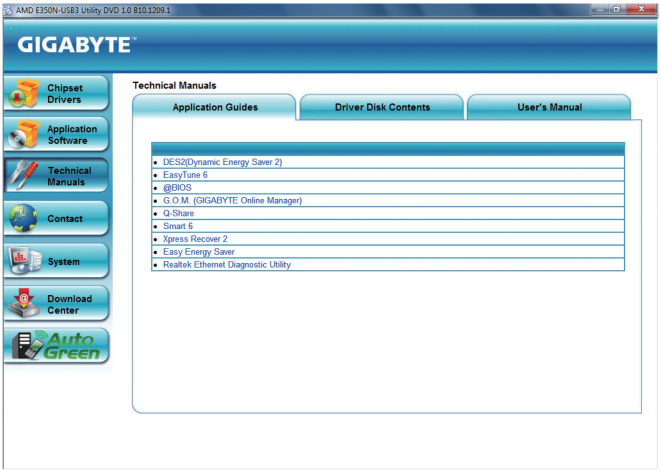
DMI Viewer
Size:2.89MB
DMI Viewer provides a management tool for viewing motherboard hardware information.

Face-Wizard
Size:3.04MB
Face Wizard provides utility for customizing BIOS boot up screen.

@BIOS

3-3 Technical Manuals

This page provides GIGABYTE's application guides, content descriptions for this driver disk, and the motherboard manuals.

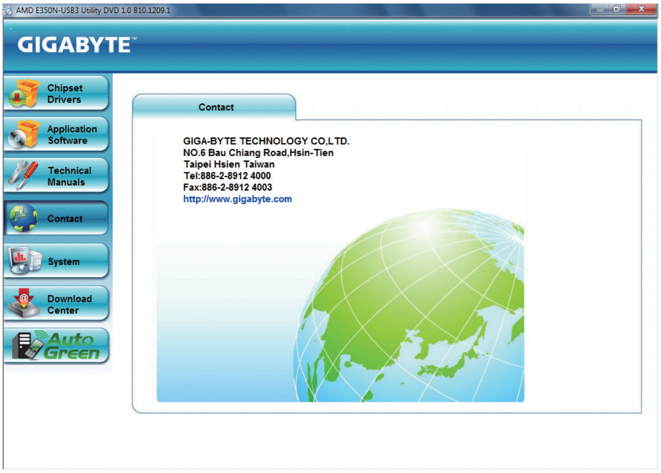

AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Application Guides
Driver Disk Contents
User's Manual

Technical Manuals

- DES2(Dynamic Energy Saver 2)
- EasyTune 6
- @BIOS
- G.O.M. (GIGABYTE Online Manager)
- Q-Share
- Smart 6
- Xpress Recover 2
- Easy Energy Saver
- Realtek Ethernet Diagnostic Utility

3-4 Contact

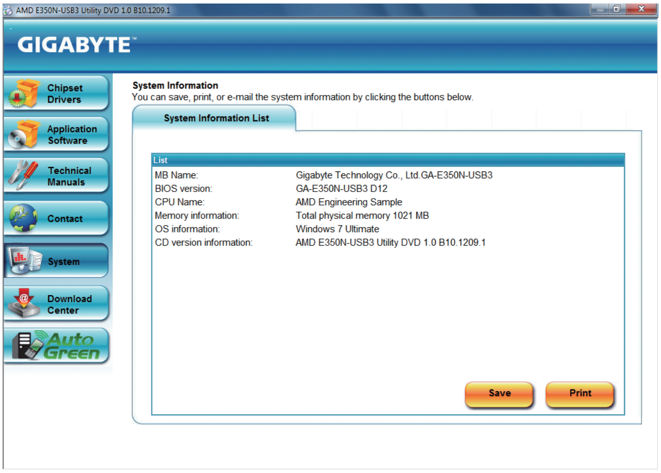
For the detailed contact information of the GIGABYTE Taiwan headquarter or worldwide branch offices, click the URL on this page to link to the GIGABYTE website.


AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Contact

GIGA-BYTE TECHNOLOGY CO,LTD.
NO.6 Bau Chiang Road,Hsin-Tien
Taipei Hsien Taiwan
Tel:886-2-8912 4000
Fax:886-2-8912 4003
http://www.gigabyte.com

3-5 System

This page provides the basic system information.


AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
System Information List
List
Save
Print

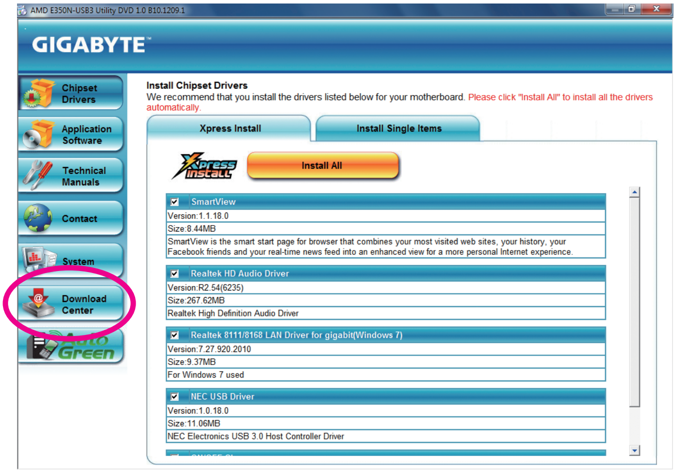
System Information

You can save, print, or e-mail the system information by clicking the buttons below.

MB Name: Gigabyte Technology Co., Ltd.GA-E350N-USB3
BIOS version: GA-E350N-USB3 D12
CPU Name: AMD Engineering Sample
Memory information: Total physical memory 1021 MB
OS information: Windows 7 Ultimate
CD version information: AMD E350N-USB3 Utility DVD 1.0 B10.1209.1

3-6 Download Center

To update the BIOS, drivers, or applications, click the **Download Center** button to link to the GIGABYTE website. The latest version of the BIOS, drivers, or applications will be displayed.


AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Xpress Install
Install Single Items
Xpress Install
Install All

Install Chipset Drivers

We recommend that you install the drivers listed below for your motherboard. Please click "Install All" to install all the drivers automatically.

☑ SmartView
Version:1.1.18.0
Size:8.44MB
SmartView is the smart start page for browser that combines your most visited web sites, your history, your Facebook friends and your real-time news feed into an enhanced view for a more personal Internet experience.

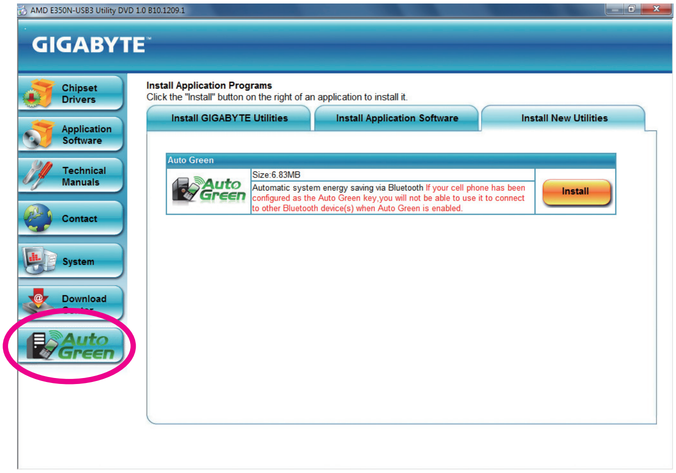
☑ Realtek HD Audio Driver
Version:R2.54(6235)
Size:267.62MB
Realtek High Definition Audio Driver

☑ Realtek 8111/8168 LAN Driver for gigabit(Windows 7)
Version:7.27.920.2010
Size:9.37MB
For Windows 7 used

☑ NEC USB Driver
Version:1.0.18.0
Size:11.06MB
NEC Electronics USB 3.0 Host Controller Driver

3-7 New Utilities

This page provides a quick link to GIGABYTE's lately developed utilities for users to install. You can click the **Install** button on the right of an item to install it.


AMD E350N-USB3 Utility DVD 1.0 B10.1209.1
GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Install GIGABYTE Utilities
Install Application Software
Install New Utilities
Auto Green
Install

Install Application Programs

Click the "Install" button on the right of an application to install it.

Auto Green
Size:6.83MB
Automatic system energy saving via Bluetooth If your cell phone has been configured as the Auto Green key,you will not be able to use it to connect to other Bluetooth device(s) when Auto Green is enabled.

Chapter 4 Unique Features

4-1 Xpress Recovery2

Xpress Recovery2 is a utility that allows you to quickly compress and back up your system data and perform restoration of it. Supporting NTFS, FAT32, and FAT16 file systems, Xpress Recovery2 can back up data on PATA and SATA hard drives and restore it.

Before You Begin:

- Xpress Recovery2 will check the first physical hard drive for the operating system. Xpress Recovery2 can only back up/restore the first physical hard drive that has the operating system installed.
- As Xpress Recovery2 will save the backup file at the end of the hard drive, make sure to leave enough unallocated space in advanced (10 GB or more is recommended; actual size requirements vary, depending on the amount of data).
- It is recommended to back up your system soon after the operating system and drivers are installed.
- The amount of data and hard drive access speed may affect the speed at which the data is backed up/restored.
- It takes longer to back up a hard drive than to restore it.

System Requirements:

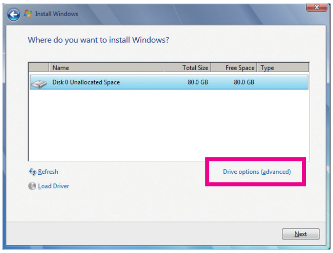
- At least 512 MB of system memory
- VESA compatible graphics card
- Windows XP with SP1 or later, Windows Vista, Windows 7

- Xpress Recovery and Xpress Recovery2 are different utilities. For example, a backup file created with Xpress Recovery cannot be restored using Xpress Recovery2.
- USB hard drives are not supported.
- Hard drives in RAID/AHCI mode are not supported.

Installation and Configuration:

Turn on your system to boot from the Windows Vista setup disk.

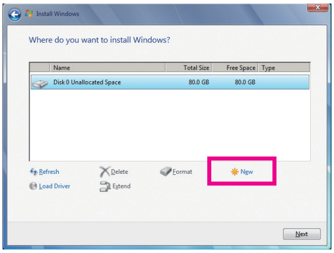
A. Installing Windows Vista and Partitioning the Hard Drive



Where do you want to install Windows?

Name	Total Size	Free Space	Type
Disk 0 Unallocated Space	80.0 GB	80.0 GB	

Step 1:
Click **Drive options**.

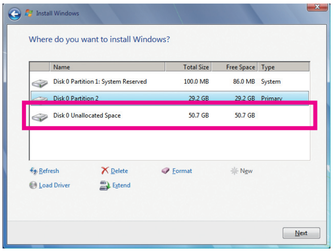


Where do you want to install Windows?

Name	Total Size	Free Space	Type
Disk 0 Unallocated Space	80.0 GB	80.0 GB	

Step 2:
Click **New**.

(Note) Xpress Recovery2 checks the first physical hard drive in the following sequence: The first SATA connector, the second SATA connector and so forth. For example, When hard drives are attached to the first and third SATA connectors, the hard drive on the first SATA connector is the first physical drive.


Install Windows

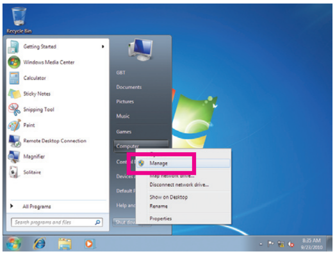
Where do you want to install Windows?

Name	Total Size	Free Space	Type
Disk 0 Partition 1: System Reserved	100.0 MB	86.0 MB	System
Disk 0 Partition 2	29.2 GB	29.2 GB	Primary
Disk 0 Unallocated Space	50.7 GB	50.7 GB	

Refresh
Delete
Format
New
Load Driver
Extend
Next

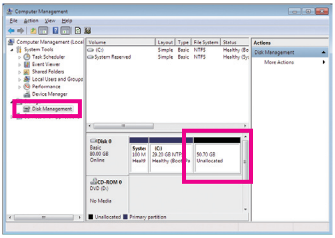
Step 3:

When partitioning your hard drive, make sure to leave unallocated space (10 GB or more is recommended; actual size requirements vary, depending on the amount of data) and begin the installation of the operating system.


Recycle Bin
Getting Started
Windows Media Center
Calculator
Sticky Notes
Snipping Tool
Paint
Remote Desktop Connection
Magnifier
Solitaire
All Programs
Search programs and files
GBT
Documents
Pictures
Music
Games
Computer
Manage
Map network drive...
Disconnect network drive...
Show on Desktop
Rename
Properties

Step 4:

After the operating system is installed, click **Start**, right-click the **Computer** and select **Manage**. Go to **Disk Management** to check disk allocation.


Computer Management
File Action View Help
Computer Management (Local)
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Disk Management
Volume
Layout
Type
File System
Status
(C:)
System Reserved
Simple
Basic
NTFS
Actions
Disk Management
More Actions
Disk 0
Basic
80.00 GB
Online
50.70 GB
Unallocated
CD-ROM 0
DVD (D:)
No Media
Unallocated
Primary partition

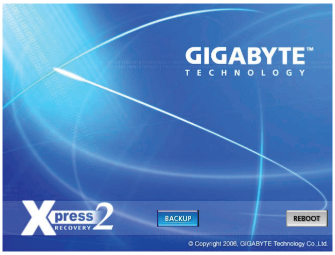
Step 5:

Xpress Recovery2 will save the backup file to the unallocated space (black stripe along the top). Please note that if there is no enough unallocated space, Xpress Recovery2 cannot save the backup file.

B. Accessing Xpress Recovery2

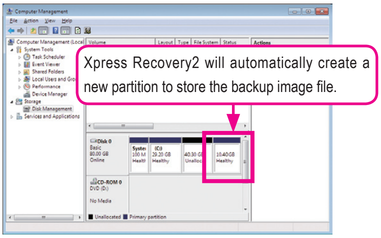
1. Boot from the motherboard driver disk to access Xpress Recovery2 for the first time. When you see the following message: `Press any key to startup Xpress Recovery2`, press any key to enter Xpress Recovery2.
2. After you use the backup function in Xpress Recovery2 for the first time, Xpress Recovery2 will stay permanent in your hard drive. If you wish to enter Xpress Recovery2 later, simply press <F9> during the POST.

C. Using the Backup Function in Xpress Recovery2


GIGABYTE™
TECHNOLOGY
Xpress 2
RECOVERY
BACKUP
REBOOT
© Copyright 2006, GIGABYTE Technology Co.,Ltd.

Step 1:

Select **BACKUP** to start backing up your hard drive data.

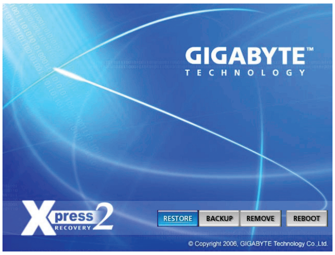

Computer Management
File Action View Help
Computer Management (Local)
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
Disk 0
Basic
80.00 GB
Online
29.20 GB
Healthy
40.30 GB
Unalloc
10.40 GB
Healthy
CD-ROM 0
DVD (D:)
No Media
Unallocated
Primary partition

Xpress Recovery2 will automatically create a new partition to store the backup image file.

Step 2:

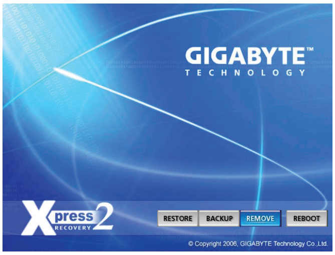
When finished, go to **Disk Management** to check disk allocation.

D. Using the Restore Function in Xpress Recovery2


GIGABYTE™
TECHNOLOGY
Xpress RECOVERY 2
RESTORE
BACKUP
REMOVE
REBOOT
© Copyright 2006, GIGABYTE Technology Co.,Ltd.

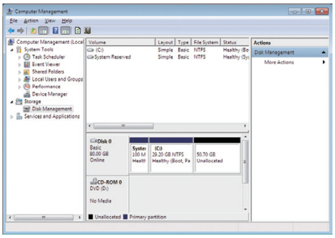
Select **RESTORE** to restore the backup to your hard drive in case the system breaks down. The **RESTORE** option will not be present if no backup is created before.

E. Removing the Backup


GIGABYTE™
TECHNOLOGY
Xpress RECOVERY 2
RESTORE
BACKUP
REMOVE
REBOOT
© Copyright 2006, GIGABYTE Technology Co.,Ltd.

Step 1:

If you wish to remove the backup file, select **REMOVE**.


Computer Management
File
Action
View
Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
Actions
Disk Management
More Actions
Unallocated
Primary partition

Volume	Layout	Type	File System	Status
(C:)	Simple	Basic	NTFS	Healthy (Bo
System Reserved	Simple	Basic	NTFS	Healthy (Sy:

Disk 0
Basic
80.00 GB
Online

Syster 100 M Healtl	(C:) 29.20 GB NTFS Healthy (Boot, Pa	50.70 GB Unallocated

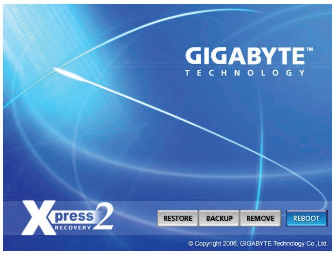
CD-ROM 0
DVD (D:)

No Media

Step 2:

After the backup file is removed, no backup image file will be present in **Disk Management** and hard drive space will be freed up.

F. Exiting Xpress Recovery2


GIGABYTE™
TECHNOLOGY
Xpress RECOVERY 2
RESTORE
BACKUP
REMOVE
REBOOT
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Select **REBOOT** to exit Xpress Recovery2.

4-2 BIOS Update Utilities

GIGABYTE motherboards provide two unique BIOS update tools, Q-Flash™ and @BIOS™. GIGABYTE Q-Flash and @BIOS are easy-to-use and allow you to update the BIOS without the need to enter MS-DOS mode. Additionally, this motherboard features the DualBIOS™ design, which enhances protection for the safety and stability of your computer by adding one more physical BIOS chip.

What is DualBIOS™?

Motherboards that support DualBIOS have two BIOS onboard, a main BIOS and a backup BIOS. Normally, the system works on the main BIOS. However, if the main BIOS is corrupted or damaged, the backup BIOS will take over on the next system boot and copy the BIOS file to the main BIOS to ensure normal system operation. For the sake of system safety, users cannot update the backup BIOS manually.

What is Q-Flash™?

With Q-Flash you can update the system BIOS without having to enter operating systems like MS-DOS or Window first. Embedded in the BIOS, the Q-Flash tool frees you from the hassles of going through complicated BIOS flashing process.

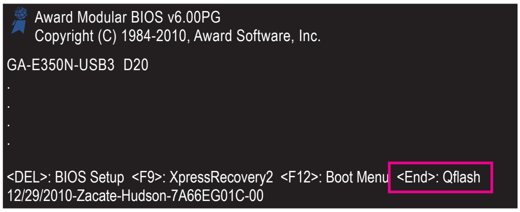
What is @BIOS™?

@BIOS allows you to update the system BIOS while in the Windows environment. @BIOS will download the latest BIOS file from the nearest @BIOS server site and update the BIOS.

4-2-1 Updating the BIOS with the Q-Flash Utility

A. Before You Begin

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Extract the file and save the new BIOS file (e.g. E350NU3.F1) to your USB flash drive, or hard drive. Note: The USB flash drive or hard drive must use FAT32/16/12 file system.
3. Restart the system. During the POST, press the <End> key to enter Q-Flash. Note: You can access Q-Flash by either pressing the <End> key during the POST or pressing the <F8> key in BIOS Setup. However, if the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent SATA controller, use the <End> key during the POST to access Q-Flash.



```
Award Modular BIOS v6.00PG
Copyright (C) 1984-2010, Award Software, Inc.

GA-E350N-USB3  D20
.
.
.
.

<DEL>: BIOS Setup  <F9>: XpressRecovery2  <F12>: Boot Menu  <End>: Qflash
12/29/2010-Zacate-Hudson-7A66EG01C-00
```

Because BIOS flashing is potentially risky, please do it with caution. Inadequate BIOS flashing may result in system malfunction.

B. Updating the BIOS

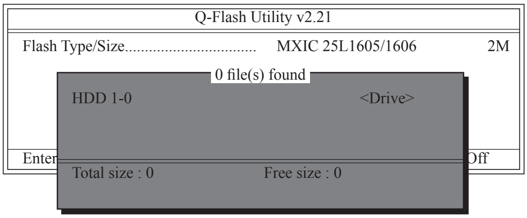
When updating the BIOS, choose the location where the BIOS file is saved. The following procedure assumes that you save the BIOS file to a USB flash drive.

Step 1:

1. Insert the USB flash drive containing the BIOS file into the computer. In the main menu of Q-Flash, use the up or down arrow key to select **Update BIOS from Drive** and press <Enter>.

   - The **Save Main BIOS to Drive** option allows you to save the current BIOS file.
   - Q-Flash only supports USB flash drive or hard drives using FAT32/16/12 file system.
   - If the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent SATA controller, use the <End> key during the POST to access Q-Flash.

2. Select **HDD 1-0** and press <Enter>.



```
                    Q-Flash Utility v2.21
Flash Type/Size................................   MXIC 25L1605/1606          2M
                         0 file(s) found
     HDD 1-0                                       <Drive>

Enter                                                                  Off
     Total size : 0                 Free size : 0
```

3. Select the BIOS update file and press <Enter>.

   Make sure the BIOS update file matches your motherboard model.

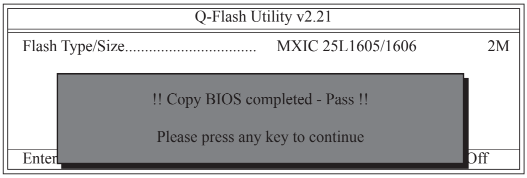
Step 2:

The process of the system reading the BIOS file from the USB flash drive is displayed on the screen. When the message "Are you sure to update BIOS?" appears, press <Enter> to begin the BIOS update. The monitor will display the update process.

- **Do not turn off or restart the system when the system is reading/updating the BIOS.**
- **Do not remove the USB flash drive or hard drive when the system is updating the BIOS.**

Step 3:

When the update process is complete, press any key to return to the main menu.



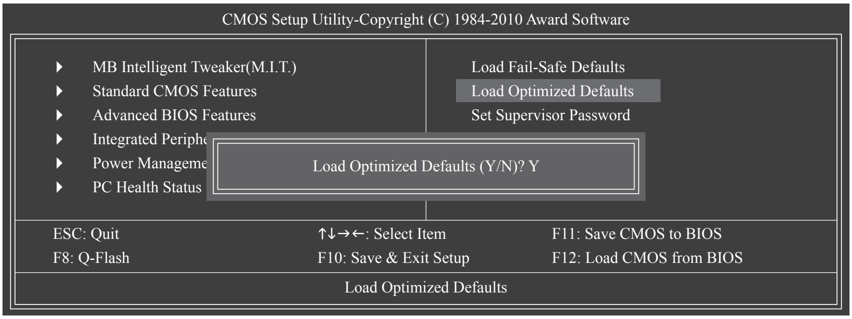
```
                    Q-Flash Utility v2.21
Flash Type/Size................................   MXIC 25L1605/1606          2M

                  !! Copy BIOS completed - Pass !!

                  Please press any key to continue
Enter                                                                  Off
```

Step 4:
Press <Esc> and then <Enter> to exit Q-Flash and reboot the system. As the system boots, you should see the new BIOS version is present on the POST screen.

Step 5:
During the POST, press <Delete> to enter BIOS Setup. Select **Load Optimized Defaults** and press <Enter> to load BIOS defaults. System will re-detect all peripheral devices after a BIOS update, so we recommend that you reload BIOS defaults.


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
MB Intelligent Tweaker(M.I.T.)
Standard CMOS Features
Advanced BIOS Features
Integrated Periphe
Power Manageme
PC Health Status
Load Fail-Safe Defaults
Load Optimized Defaults
Set Supervisor Password
ESC: Quit
F8: Q-Flash
↑↓→←: Select Item
F10: Save & Exit Setup
F11: Save CMOS to BIOS
F12: Load CMOS from BIOS
Load Optimized Defaults

Load Optimized Defaults (Y/N)? Y

Press <Y> to load BIOS defaults

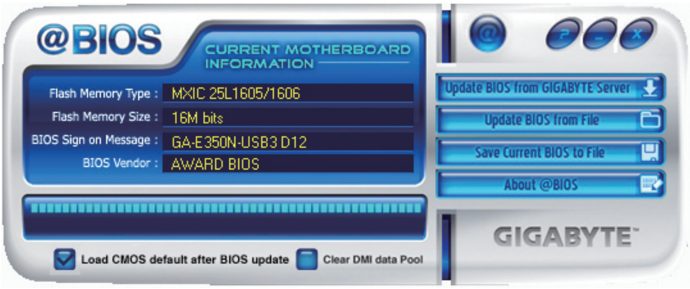
Step 6:
Select **Save & Exit Setup** and then press <Y> to save settings to CMOS and exit BIOS Setup. The procedure is complete after the system restarts.

4-2-2 Updating the BIOS with the @BIOS Utility

A. Before You Begin

1. In Windows, close all applications and TSR (Terminate and Stay Resident) programs. This helps prevent unexpected failures when performing a BIOS update.
2. During the BIOS update process, ensure the Internet connection is stable and do NOT interrupt the Internet connection (for example, avoid a power loss or switching off the Internet). Failure to do so may result in a corrupted BIOS or a system that is unable to start.
3. Do not use the G.O.M. (GIGABYTE Online Management) function when using @BIOS.
4. GIGABYTE product warranty does not cover any BIOS damage or system failure resulting from an inadequate BIOS flashing.

B. Using @BIOS


@BIOS
CURRENT MOTHERBOARD INFORMATION
Update BIOS from GIGABYTE Server
Update BIOS from File
Save Current BIOS to File
About @BIOS
GIGABYTE

Flash Memory Type : MXIC 25L1605/1606
Flash Memory Size : 16M bits
BIOS Sign on Message : GA-E350N-USB3 D12
BIOS Vendor : AWARD BIOS

☑ Load CMOS default after BIOS update ☐ Clear DMI data Pool

1. Update BIOS from GIGABYTE Server **Update the BIOS Using the Internet Update Function:**

   Click **Update BIOS from GIGABYTE Server**, select the @BIOS server site closest to your location and then download the BIOS file that matches your motherboard model. Follow the on-screen instructions to complete.

   If the BIOS update file for your motherboard is not present on the @BIOS server site, please manually download the BIOS update file from GIGABYTE's website and follow the instructions in "Update the BIOS without Using the Internet Update Function" below.

2. Update BIOS from File **Update the BIOS without Using the Internet Update Function:**

   Click **Update BIOS from File**, then select the location where you save the BIOS update file obtained from the Internet or through other source. Follow the on-screen instructions to complete.

3. Save Current BIOS to File **Save the Current BIOS File:**

   Click **Save Current BIOS to File** to save the current BIOS file.

4. ☑ Load CMOS default after BIOS update **Load BIOS Defaults after BIOS Update:**

   Select the **Load CMOS default after BIOS update** check box and then the system will automatically load BIOS defaults after BIOS update and after the system restarts.

C. After Updating the BIOS

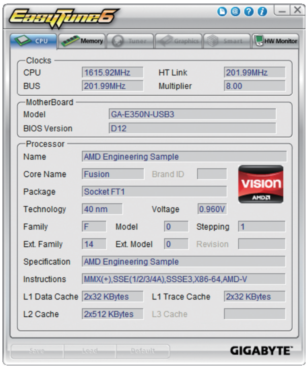
Restart your system after updating the BIOS.

Make sure that the BIOS file to be flashed matches your motherboard model. Updating the BIOS with an incorrect BIOS file could cause your system not to boot.

4-3 EasyTune 6

GIGABYTE's EasyTune 6 is a simple and easy-to-use interface that allows users to fine-tune their system settings or do overclock/overvoltage in Windows environment. The user-friendly EasyTune 6 interface also includes tabbed pages for CPU and memory information, letting users read their system-related information without the need to install additional software.

The EasyTune 6 Interface



Clocks
CPU 1615.92MHz
HT Link 201.99MHz
BUS 201.99MHz
Multiplier 8.00

MotherBoard
Model GA-E350N-USB3
BIOS Version D12

Processor
Name AMD Engineering Sample
Core Name Fusion
Brand ID
Package Socket FT1
Technology 40 nm
Voltage 0.960V
Family F
Model 0
Stepping 1
Ext. Family 14
Ext. Model 0
Revision
Specification AMD Engineering Sample
Instructions MMX(+),SSE(1/2/3/4A),SSSE3,X86-64,AMD-V
L1 Data Cache 2x32 KBytes
L1 Trace Cache 2x32 KBytes
L2 Cache 2x512 KBytes
L3 Cache

Tabs Information

Tab	Function
CPU	The **CPU** tab provides information on the installed CPU and motherboard.
Memory	The **Memory** tab provides information on the installed memory module(s). You can select memory module on a specific slot to see its information.
HW Monitor	The **HW Monitor** tab allows you to monitor hardware temperature, voltage and fan speed and set temperature/fan speed alarm. You can choose the alert sound from the buzzer or use your own sound file (.wav file).

Available functions in EasyTune 6 may differ by motherboard model. Grayed-out area(s) indicates that the item is not configurable or the function is not supported.

Incorrectly doing overclock/overvoltage may result in damage to the hardware components such as CPU, chipset, and memory and reduce the useful life of these components. Before you do the overclock/overvoltage, make sure that you fully know each function of EasyTune 6, or system instability or other unexpected results may occur.

4-4 Q-Share

Q-Share is an easy and convenient data sharing tool. After configuring your LAN connection settings and Q-Share, you are able to share your data with computers on the same network, making full use of Internet resources.

GIGABYTE™
Q-Share
Ver.1.0

Directions for using Q-Share

After installing Q-Share from the motherboard driver disk, go to Start>All Programs>GIGABYTE>Q-Share.exe to launch the Q-Share tool. Find the **Q-Share** icon in the notification area and right-click on this icon to configure the data sharing settings.

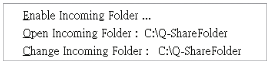

Enable Incoming Folder ...
Open Incoming Folder : C:\Q-ShareFolder
Change Incoming Folder : C:\Q-ShareFolder

Figure 1. Data Sharing Disabled

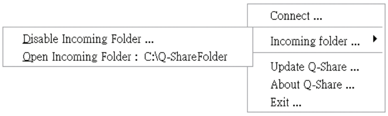

Connect ...
Incoming folder ...
Update Q-Share ...
About Q-Share ...
Exit ...
Disable Incoming Folder ...
Open Incoming Folder : C:\Q-ShareFolder

Figure 2. Data Sharing Enabled

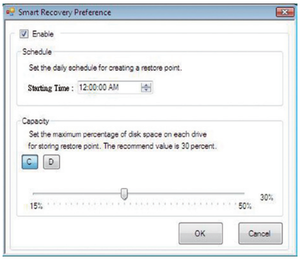
Options Descriptions

Option	Description
Connect ...	Displays the computers with data sharing enabled
Enable Incoming Folder ...	Enables data sharing
Disable Incoming Folder ...	Disables data sharing
Open Incoming Folder : C:\Q-ShareFolder	Accesses the shared data folder
Change Incoming Folder : C:\Q-ShareFolder	Changes the data folder to be shared (Note)
Update Q-Share ...	Updates Q-Share online
About Q-Share ...	Displays the current Q-Share version
Exit...	Exits Q-Share

(Note) This option is available only when data sharing is NOT enabled.

4-5 SMART Recovery

With SMART Recovery, users can quickly create backups of changed data files (Note 1) or copy files from a specific backup on PATA and SATA hard drives (partitioned on NTFS file system) in Windows Vista.



Smart Recovery Preference

☑ Enable

Schedule

Set the daily schedule for creating a restore point.

Starting Time : 12:00:00 AM

Capacity

Set the maximum percentage of disk space on each drive for storing restore point. The recommend value is 30 percent.

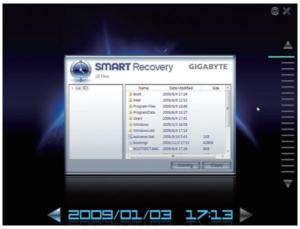
Instructions:

In the main menu, click the **Config** button to open the **Smart Recovery Preference** dialog box.

The **Smart Recovery Preference** dialog box:

Button	Function
Enable	Enables automatic daily backup (Note 2)
Schedule	Sets a daily backup schedule
Capacity	Sets the percentage of hard drive space used for saving backups (Note 3)

- The hard drive must have more than 1 GB of capacity.
- Each partition can accommodate up to 64 backups (the actual limit depends on the size of each partition). When this limit is reached, the oldest backup will be ovewritten.



Instructions for copying files/folders from a backup:

To browse through your backups made at different time, select a backup time using the time scroll bar on the right or at the bottom of the screen. If you want to copy back a file/folder, select the file/folder you wish to copy and click the **Copy** button.

The files/folders listed on the screen are read-only so you cannot edit their contents.

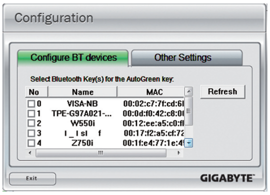
(Note 1) The changed data refers to the data that has been modified, deleted, or newly added since the last backup.

(Note 2) The system will make an automatic backup on changed data only once everyday. If the computer is turned on for a long time, the backup will be performed at the scheduled backup time. If the computer is turned off before the scheduled backup time, the backup will be performed on the next boot.

(Note 3) We recommend that you preserve at least 25 percent of the hard drive space to optimize the storage space for the backups. The backups of the changed data will be stored in the original partition of the data.

4-6 Auto Green

Auto Green is an easy-to-use tool that provides users with simple options to enable system power savings via a Bluetooth cell phone. When the phone is out of the range of the computer's Bluetooth receiver, the system will enter the specified power saving mode.



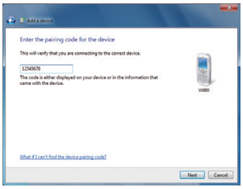
Select Bluetooth Key(s) for the AutoGreen key:

No	Name	MAC
☐ 0	VISA-NB	00:02:c7:7f:cd:6
☐ 1	TPE-G97A021-...	00:0d:f0:42:c8:0
☐ 2	W550i	00:12:ee:a5:c0:f
☐ 3	I _ I sI f	00:17:f2:a5:cf:72
☐ 4	Z750i	00:1f:e4:77:1e:4

The Configuration dialog box:

First, you have to set your Bluetooth cell phone as a portable key. On the Auto Green main menu, click **Configure** and then click **Configure BT devices**. Select the Bluetooth cell phone that you want to use as the portable key (Note 1). (If the screen doesn't display your Bluetooth cell phone, click **Refresh** to let Auto Green re-detect the device.)

Before creating a Bluetooth cell phone key, make sure your motherboard has a Bluetooth receiver and you have turned on the search and Bluetooth functions on your phone.



Enter the pairing code for the device

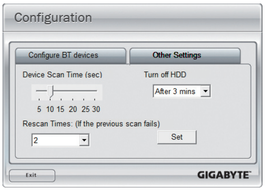
This will verify that you are connecting to the correct device.

12345678

The code is either displayed on your device or in the information that came with the device.

Configuring the Bluetooth cell phone key:

After you select a cell phone, the **Add device** as shown on the left will appear. Enter a passkey (8~16 digits recommended) which will be used for pairing with the cell phone. Then enter the same passkey on your cell phone.



Device Scan Time (sec)

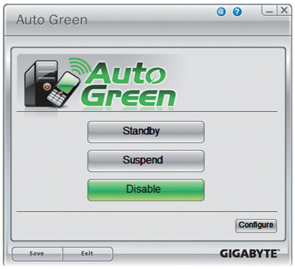
Turn off HDD: After 3 mins

Rescan Times: (If the previous scan fails) 2

Configuring other Bluetooth settings:

On the **Other Settings** tab, you can set how much time it takes to scan your Bluetooth cell phone key, how many times to rescan the key to make sure it is in range of your computer, and when to turn off the hard drive if the system energy saving state lasts over the predetermined period of time. After completing the settings, click **Set** for the settings to take effect and then click **Exit** to quit.

- Device Scan Time (sec.):
  Set the length of time Auto Green scans your Bluetooth cell phone key, ranging from 5 to 30 seconds in 5-second increment. Auto Green searches for the key based on the length of time you set.
- Rescan Times:
  Set how many times Auto Green will rescan your Bluetooth cell phone key if it does not detect it, ranging from 2 to 5 times. Auto Green will keep rescanning according to the times you set. When the times limit is reached and your Bluetooth cell phone key is still not detected, the system will enter the selected energy saving mode.
- Turn off HD:
  Set when to turn off the hard drive. If the system inactivity time exceeds the specified time limit, the hard drive will be turned off.



Selecting a system energy saving mode:

Depending on your needs, select a system power saving mode on the Auto Green main menu and click **Save** to save the settings.

Button	Description
Standby	Enters Power on Suspend mode
Suspend	Enters Suspend to RAM mode
Disable	Disables this function

The Bluetooth dongle included in the motherboard package (Note 2) allows you to wake up the system from Suspend to RAM mode without the need to press the power button first.

(Note 1) If your cell phone has been configured as the Auto Green key, you'll not be able to use it to connect to other Bluetooth device(s) when Auto Green is enabled.

(Note 2) Whether the Bluetooth dongle is included depends on the motherboard models. Before installing the Bluetooth dongle, be sure to turn off other Bluetooth receiver on your computer.

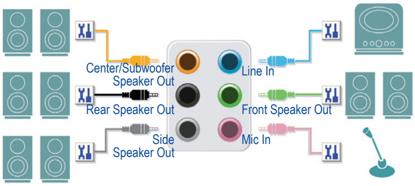
Chapter 5 Appendix

5-1 Configuring Audio Input and Output

5-1-1 Configuring 2/4/5.1/7.1-Channel Audio

The motherboard provides six audio jacks on the back panel which support 2/4/5.1/7.1-channel (Note) audio. The picture to the right shows the default audio jack assignments.

The integrated HD (High Definition) audio provides jack retasking capability that allows the user to change the function for each jack through the audio driver.



For example, in a 4-channel audio configuration, if a Side speaker is plugged into the default Center/Subwoofer speaker out jack, you can retask the Center/Subwoofer speaker out jack to be Side speaker out.

- To install a microphone, connect your microphone to the Mic in jack and manually configure the jack for microphone functionality.
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to instructions on the next page.

High Definition Audio (HD Audio)

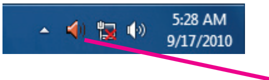
HD Audio includes multiple high quality digital-to-analog converters (DACs) that support 44.1KHz/48KHz/96KHz/192KHz sampling rate. HD Audio features multistreaming capabilities that allow multiple audio streams (in and out) to be simultaneously processed. For example, users can listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

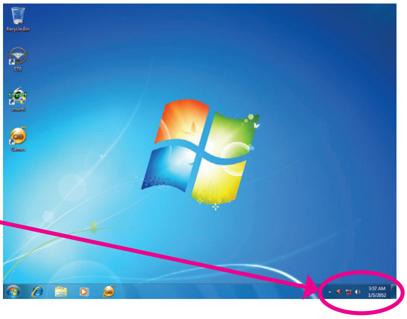
A. Configuring Speakers

(The following instructions use Windows 7 as the example operating system.)

Step 1:

After installing the audio driver, the **HD Audio Manager** icon 🔈 will appear in the notification area. Double-click the icon to access the **HD Audio Manager**.



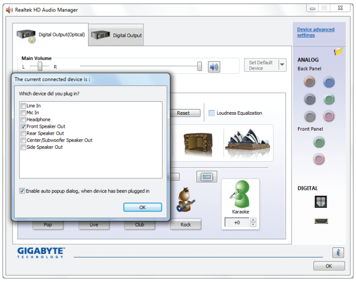


(Note) 2/4/5.1/7.1-Channel Audio Configurations:

Refer to the following for multi-channel speaker configurations.

- 2-channel audio: Headphone or Line out.
- 4-channel audio: Front speaker out and Side speaker out.
- 5.1-channel audio: Front speaker out, Side speaker out, and Center/Subwoofer speaker out.
- 7.1-channel audio: Front speaker out, Rear speaker out, Center/Subwoofer speaker out, and Side speaker out.

Step 2:
Connect an audio device to an audio jack. The **The current connected device is** dialog box appears. Select the device according to the type of device you connect. Then click **OK**.


Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Device advanced settings
Main Volume
L
R
Set Default Device
ANALOG
Back Panel
Front Panel
DIGITAL
Reset
Loudness Equalization
Karaoke
+0
Pop
Live
Club
Rock
GIGABYTE TECHNOLOGY
OK

The current connected device is :

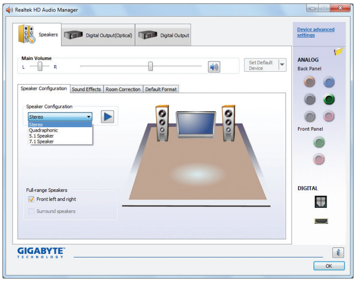
Which device did you plug in?

☐ Line In
☐ Mic In
☐ Headphone
☑ Front Speaker Out
☐ Rear Speaker Out
☐ Center/Subwoofer Speaker Out
☐ Side Speaker Out

☑ Enable auto popup dialog, when device has been plugged in

OK

Step 3:
On the **Speakers** screen, click the **Speaker Configuration** tab. In the **Speaker Configuration** list, select **Stereo**, **Quadraphonic**, **5.1 Speaker**, or **7.1 Speaker** according to the type of speaker configuration you wish to set up. Then the speaker setup is completed.


Realtek HD Audio Manager
Speakers
Digital Output(Optical)
Digital Output
Device advanced settings
Main Volume
L
R
Set Default Device
Speaker Configuration
Sound Effects
Room Correction
Default Format
ANALOG
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

Speaker Configuration: Stereo
Stereo
Quadraphonic
5.1 Speaker
7.1 Speaker

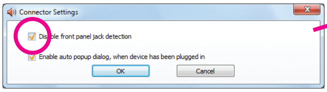
Full-range Speakers
☑ Front left and right
☐ Surround speakers

B. Configuring Sound Effect

You may configure an audio environment on the **Sound Effects** tab.

C. Activating an AC'97 Front Panel Audio Module

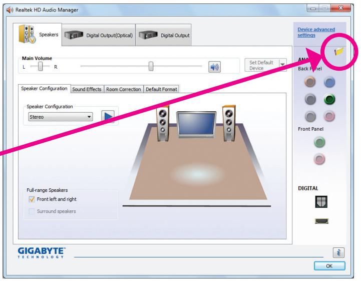
If your chassis provides an AC'97 front panel audio module, to activate the AC'97 functionality, click the tool icon on the **Speaker Configuration** tab. On the **Connector Settings** dialog box, select the **Disable front panel jack detection** check box. Click **OK** to complete.


Connector Settings

☑ Disable front panel jack detection

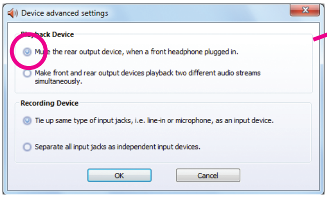
☑ Enable auto popup dialog, when device has been plugged in

OK
Cancel


Realtek HD Audio Manager
Speakers
Digital Output(Optical)
Digital Output
Device advanced settings
Main Volume
Set Default Device
Speaker Configuration
Sound Effects
Room Correction
Default Format
Stereo
Full-range Speakers
Front left and right
Surround speakers
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

D. Muting the Back Panel Audio (For HD Audio Only)

Click **Device advanced settings** on the top right corner on the **Speaker Configuration** tab to open the **Device advanced settings** dialog box. Select the **Mute the rear output device, when a front headphone plugged in** check box. Click **OK** to complete.


Device advanced settings

Playback Device

● Mute the rear output device, when a front headphone plugged in.

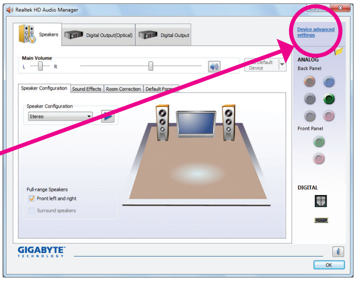
○ Make front and rear output devices playback two different audio streams simultaneously.

Recording Device

● Tie up same type of input jacks, i.e. line-in or microphone, as an input device.

○ Separate all input jacks as independent input devices.

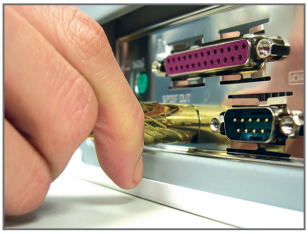
OK
Cancel


Realtek HD Audio Manager
Speakers
Digital Output(Optical)
Digital Output
Device advanced settings
Main Volume
Set Default Device
ANALOG
Back Panel
Front Panel
DIGITAL
Speaker Configuration
Sound Effects
Room Correction
Default Format
Stereo
Full-range Speakers
Front left and right
Surround speakers
GIGABYTE TECHNOLOGY
OK

5-1-2 Configuring S/PDIF Out

The S/PDIF Out jack (Note 1) can transmit audio signals to an external decoder for decoding to get the best audio quality.

1. Connecting a S/PDIF Out Cable:

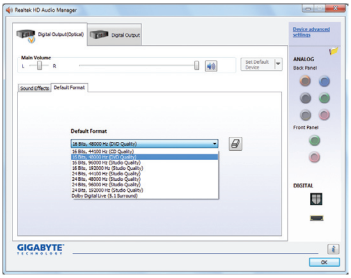


S/PDIF Optical Cable

Connect a S/PDIF optical cable to an external decoder for transmitting the S/PDIF digital audio signals.

2. Configuring S/PDIF Out:

On the **Digital Output(Optical)** screen (Note 2), click the **Default Format** tab and then select the sample rate and bit depth. Click **OK** to complete.


Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Device advanced settings
Main Volume
L
R
Set Default Device
ANALOG
Back Panel
Front Panel
DIGITAL
Sound Effects
Default Format
16 Bits, 44100 Hz (CD Quality)
16 Bits, 48000 Hz (DVD Quality)
16 Bits, 96000 Hz (Studio Quality)
16 Bits, 192000 Hz (Studio Quality)
24 Bits, 44100 Hz (Studio Quality)
24 Bits, 48000 Hz (Studio Quality)
24 Bits, 96000 Hz (Studio Quality)
24 Bits, 192000 Hz (Studio Quality)
Dolby Digital Live (5.1 Surround)
GIGABYTE TECHNOLOGY
OK

Default Format: 16 Bits, 48000 Hz (DVD Quality)

(Note 1) The actual location of the S/PDIF Out connector may differ by model.

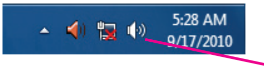
(Note 2) Enter the **Digital Output(Optical)** screen to configure further settings if you use the S/PDIF Out connector on the back panel for digital audio output or enter the **Digital Output** screen if you use the internal S/PDIF Out connector (SPDIF_O) for digital audio output.

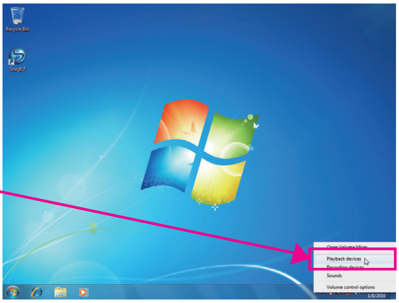
5-1-3 Enabling the Dolby Home Theater Function

Before Dolby Home Theater is enabled, you get only 2-channel playback output (from the front speakers) when playing 2-channel stereo sources. You must play 4-, 5.1-, or 7.1- channel content to get 4-, 5.1-, or 7.1- channel audio effects. With Dolby Home Theater enabled, 2-channel stereo content will be transformed into multi-channel audio, creating a virtual surround sound environment.

Step 1:

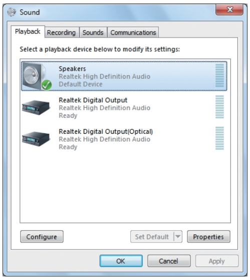
Locate the 🔊 icon in the notification area and right-click on this icon. Select **Playback devices**.


5:28 AM
9/17/2010


Recycle Bin
Open Volume Mixer
Playback devices
Recording devices
Sounds
Volume control options
1/8/2010

Step 2:

On the **Playback** tab, select **Speakers**. Then click **Properties**.


Sound
Playback
Recording
Sounds
Communications
Configure
Set Default
Properties
OK
Cancel
Apply

Select a playback device below to modify its settings:

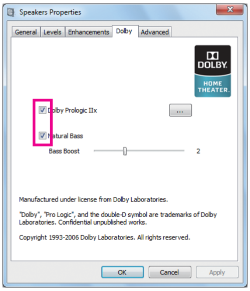
Speakers
Realtek High Definition Audio
Default Device

Realtek Digital Output
Realtek High Definition Audio
Ready

Realtek Digital Output(Optical)
Realtek High Definition Audio
Ready

Step 3:

On the **Dolby** tab, select the **Dolby Prologic IIx** and **Natural Bass** check boxes. Click **OK** to complete.


Speakers Properties
General
Levels
Enhancements
Dolby
Advanced
...
OK
Cancel
Apply

☑ Dolby Prologic IIx

☑ Natural Bass

Bass Boost 2

Manufactured under license from Dolby Laboratories.

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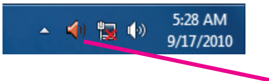
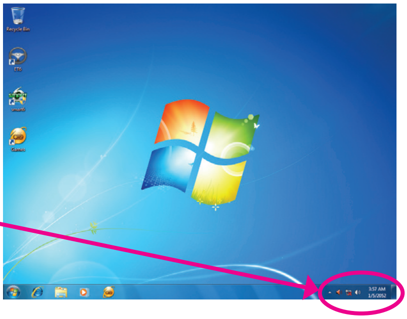
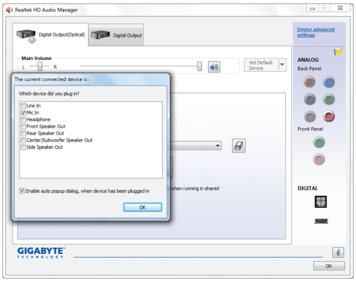
5-1-4 Configuring Microphone Recording

Step 1:
After installing the audio driver, the **HD Audio Manager** icon 🔊 will appear in the notification area. Double-click the icon to access the **HD Audio Manager**.


5:28 AM
9/17/2010


Recycle Bin
3:57 AM
1/5/2052

Step 2:
Connect your microphone to the Mic in jack (pink) on the back panel or the Mic in jack (pink) on the front panel. Then configure the jack for microphone functionality.
Note: The microphone functions on the front panel and back panel cannot be used at the same time.


Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Main Volume
L
R
Set Default Device
Device advanced settings
ANALOG
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

The current connected device is :

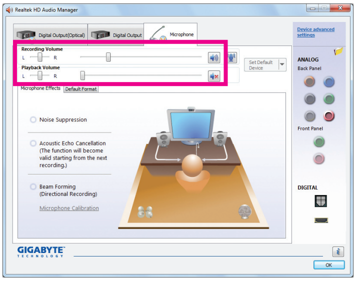
Which device did you plug in?

☐ Line In
☑ Mic In
☐ Headphone
☐ Front Speaker Out
☐ Rear Speaker Out
☐ Center/Subwoofer Speaker Out
☐ Side Speaker Out

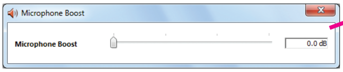
☑ Enable auto popup dialog, when device has been plugged in

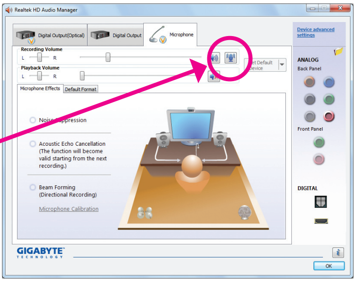
OK

Step 3:
Go to the **Microphone** screen. Do not mute the recording volume, or you'll not be able to record the sound. To hear the sound being recorded during the recording process, do not mute the playback volume. It is recommended that you set the volumes at a middle level.

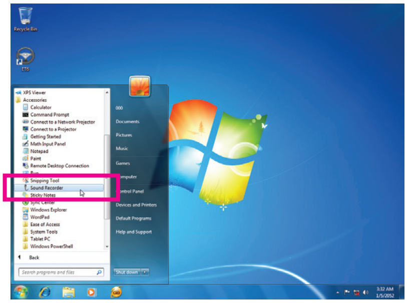

Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Microphone
Recording Volume
L
R
Playback Volume
L
R
Set Default Device
Microphone Effects
Default Format
Noise Suppression
Acoustic Echo Cancellation (The function will become valid starting from the next recording.)
Beam Forming (Directional Recording)
Microphone Calibration
Device advanced settings
ANALOG
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

Step 4:
To raise the recording and playback volume for the microphone, click the **Microphone Boost** icon 🎤 on the right of the **Recording Volume** slider and set the Microphone Boost level.


Microphone Boost
Microphone Boost
0.0 dB


Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Microphone
Recording Volume
Playback Volume
Set Default Device
Microphone Effects
Default Format
Noise Suppression
Acoustic Echo Cancellation (The function will become valid starting from the next recording.)
Beam Forming (Directional Recording)
Microphone Calibration
Device advanced settings
ANALOG
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

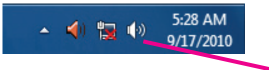
Step 5:
After completing the settings above, click **Start**, point to **All Programs**, point to **Accessories**, and then click **Sound Recorder** to begin the sound recording.

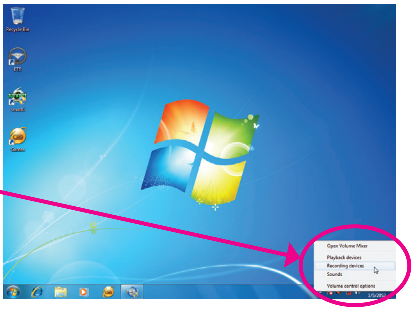

Recycle Bin
XPS Viewer
Accessories
Calculator
Command Prompt
Connect to a Network Projector
Connect to a Projector
Getting Started
Math Input Panel
Notepad
Paint
Remote Desktop Connection
Snipping Tool
Sound Recorder
Sticky Notes
Sync Center
Windows Explorer
WordPad
Ease of Access
System Tools
Tablet PC
Windows PowerShell
Back
Search programs and files
Documents
Pictures
Music
Games
Control Panel
Devices and Printers
Default Programs
Help and Support
Shut down
3:32 AM

* Enabling Stereo Mix

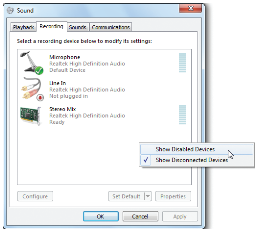
If the HD Audio Manager does not display the recording device you wish to use, refer to the steps below. The following steps explain how to enable Stereo Mix (which may be needed when you want to record sound from your computer).

Step 1:
Locate the 🔊 icon in the notification area and right-click on this icon. Select **Recording Devices**.

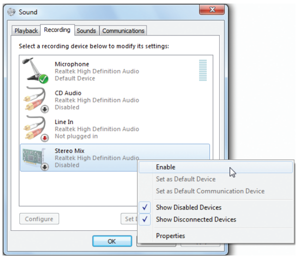

5:28 AM
9/17/2010


Recycle Bin
Open Volume Mixer
Playback devices
Recording devices
Sounds
Volume control options

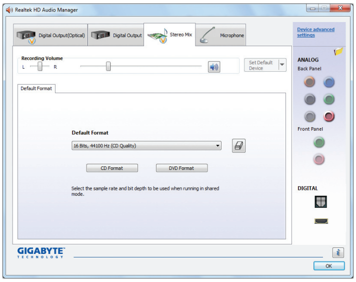
Step 2:
On the **Recording** tab, right-click on an empty space and select **Show Disabled Devices**.


Sound
Playback
Recording
Sounds
Communications
Select a recording device below to modify its settings:
Microphone
Realtek High Definition Audio
Default Device
Line In
Realtek High Definition Audio
Not plugged in
Stereo Mix
Realtek High Definition Audio
Ready
Show Disabled Devices
✓ Show Disconnected Devices
Configure
Set Default
Properties
OK
Cancel
Apply

Step 3:
When the **Stereo Mix** item appears, right-click on this item and select **Enable**. Then set it as the default device.


Sound
Playback
Recording
Sounds
Communications
Select a recording device below to modify its settings:
Microphone
Realtek High Definition Audio
Default Device
CD Audio
Realtek High Definition Audio
Disabled
Line In
Realtek High Definition Audio
Not plugged in
Stereo Mix
Realtek High Definition Audio
Disabled
Enable
Set as Default Device
Set as Default Communication Device
✓ Show Disabled Devices
✓ Show Disconnected Devices
Properties
Configure
OK

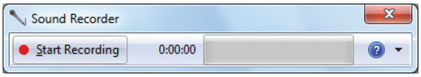
Step 4:
Now you can access the **HD Audio Manager** to configure **Stereo Mix** and use **Sound Recorder** to record the sound.


Realtek HD Audio Manager
Digital Output(Optical)
Digital Output
Stereo Mix
Microphone
Device advanced settings
Recording Volume
L
R
Set Default Device
Default Format
CD Format
DVD Format
ANALOG
Back Panel
Front Panel
DIGITAL
GIGABYTE TECHNOLOGY
OK

Default Format: 16 Bits, 44100 Hz (CD Quality)

Select the sample rate and bit depth to be used when running in shared mode.

5-1-5 Using the Sound Recorder


Sound Recorder
Start Recording
0:00:00

A. Recording Sound

1. Make sure you have connected the sound input device (e.g. microphone) to the computer.
2. To record the audio, click the **Start Recording** button ● Start Recording.
3. To stop recording audio, click the **Stop Recording** button ■ Stop Recording.

Be sure to save the recorded audio file upon completion.

B. Playing the Recorded Sound

You can play your recording in a digital media player program that supports your audio file format.

5-2 Troubleshooting

5-2-1 Frequently Asked Questions

To read more FAQs for your motherboard, please go to the **Support & Downloads\FAQ** page on GIGABYTE's website.

Q: In the BIOS Setup program, why are some BIOS options missing?

A: Some advanced options are hidden in the BIOS Setup program. Press <Delete> to enter BIOS Setup during the POST. In the Main Menu, press <Ctrl>+<F1> to show the advanced options.

Q: Why is the light of my keyboard/optical mouse still on after the computer shuts down?

A: Some motherboards provide a small amount of standby power after the computer shuts down and that's why the light is still on.

Q: How do I clear the CMOS values?

A: For motherboards that have a CMOS_SW button, press this button to clear the CMOS values (before doing this, please turn off the computer and unplug the power cord). For motherboards that have a clearing CMOS jumper, refer to the instructions on the CLR_CMOS jumper in Chapter 1 to short the jumper to clear the CMOS values. If your board doesn't have this jumper, refer to the instructions on the motherboard battery in Chapter 1. You can temporarily remove the battery from the battery holder to stop supplying power to the CMOS, which will clear the CMOS values after about one minute.

Q: Why do I still get a weak sound even though I have turned my speaker to the maximum volume?

A: Make sure your speaker is equipped with an internal amplifier. If not, try a speaker with power/amplifier.

Q: Why cannot I install the onboard HD audio driver successfully? (For Windows XP only)

A: Step 1: First, make sure Service Pack 1 or Service Pack 2 has been installed (check in My Computer > Properties > General > System). If not, please update it from Microsoft's website. Then make sure the Microsoft UAA Bus Driver for High Definition Audio has been installed successfully (check in My Computer > Properties > Hardware > Device Manager > System Devices).

Step 2: Check if **Audio Device on High Definition Audio Bus** or **Unknown device** is present in **Device Manager** or **Sound, video, and game controllers**. If yes, please disable this device. (If not, skip this step.)

Step 3: Then go back to My Computer > Properties > Hardware > Device Manager > System devices and right-click on **Microsoft UAA Bus Driver for High Definition Audio** and select **Disable** and **Uninstall**.

Step 4: In **Device Manager**, right-click on the computer name and select **Scan for hardware changes**. When the **Add New Hardware Wizard** appears, click **Cancel**. Then install the onboard HD audio driver from the motherboard driver disk or download the audio driver from GIGABYTE's website to install.

For more details, go to the **Support & Downloads\FAQ** page on our website and search for "onboard HD audio driver."

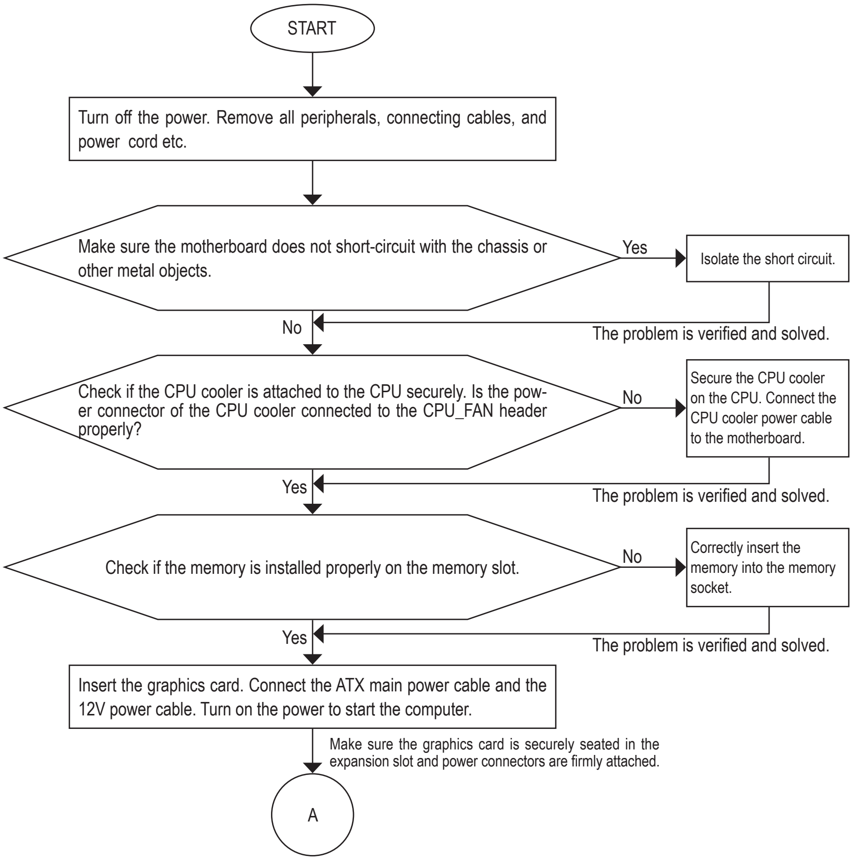
Q: What do the beeps emitted during the POST mean?

A: The following Award BIOS beep code descriptions may help you identify possible computer problems.
(For reference only.)

1 short: System boots successfully
2 short: CMOS setting error
1 long, 1 short: Memory or motherboard error
1 long, 2 short: Monitor or graphics card error
1 long, 3 short: Keyboard error
1 long, 9 short: BIOS ROM error
Continuous long beeps: Graphics card not inserted properly
Continuous short beeps: Power error

5-2-2 Troubleshooting Procedure

If you encounter any troubles during system startup, follow the troubleshooting procedure below to solve the problem.



Turn off the power. Remove all peripherals, connecting cables, and power cord etc.

Make sure the motherboard does not short-circuit with the chassis or other metal objects.

Isolate the short circuit.

The problem is verified and solved.

Check if the CPU cooler is attached to the CPU securely. Is the power connector of the CPU cooler connected to the CPU_FAN header properly?

Secure the CPU cooler on the CPU. Connect the CPU cooler power cable to the motherboard.

The problem is verified and solved.

Check if the memory is installed properly on the memory slot.

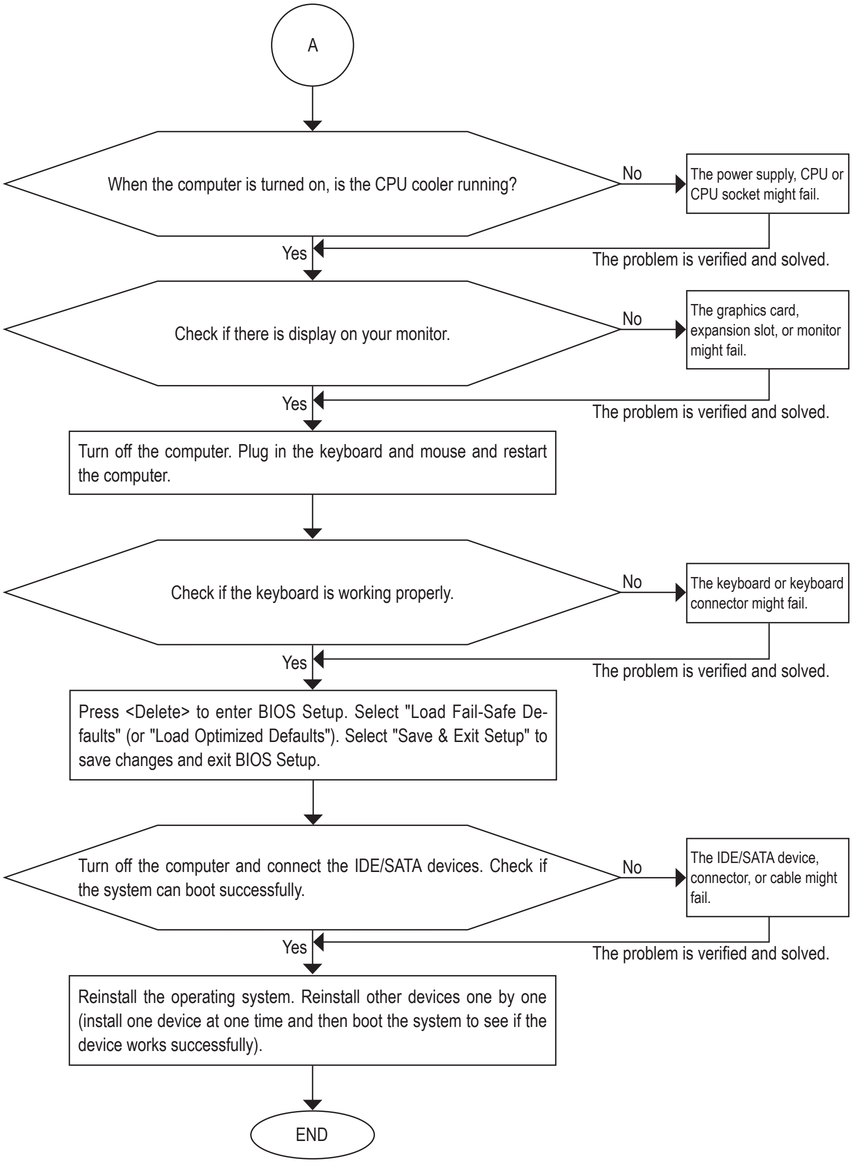
Correctly insert the memory into the memory socket.

The problem is verified and solved.

Insert the graphics card. Connect the ATX main power cable and the 12V power cable. Turn on the power to start the computer.

Make sure the graphics card is securely seated in the expansion slot and power connectors are firmly attached.

(Continued...)


A
When the computer is turned on, is the CPU cooler running?
No
The power supply, CPU or CPU socket might fail.
The problem is verified and solved.
Yes
Check if there is display on your monitor.
No
The graphics card, expansion slot, or monitor might fail.
The problem is verified and solved.
Yes
Turn off the computer. Plug in the keyboard and mouse and restart the computer.
Check if the keyboard is working properly.
No
The keyboard or keyboard connector might fail.
The problem is verified and solved.
Yes
Press <Delete> to enter BIOS Setup. Select "Load Fail-Safe Defaults" (or "Load Optimized Defaults"). Select "Save & Exit Setup" to save changes and exit BIOS Setup.
Turn off the computer and connect the IDE/SATA devices. Check if the system can boot successfully.
No
The IDE/SATA device, connector, or cable might fail.
The problem is verified and solved.
Yes
Reinstall the operating system. Reinstall other devices one by one (install one device at one time and then boot the system to see if the device works successfully).
END

If the procedure above is unable to solve your problem, contact the place of purchase or local dealer for help. Or go to the **Support & Downloads\Technical Support** page to submit your question. Our customer service staff will reply you as soon as possible.

Contact Us

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WEB address (Chinese): http://www.gigabyte.tw

- **G.B.T. INC. - U.S.A.**

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Web address: http://www.gigabyte.us

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http://rma.gigabyte.us
Web address: http://latam.giga-byte.com

- **Giga-Byte SINGAPORE PTE. LTD. - Singapore**

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- **Thailand**

WEB address : http://th.giga-byte.com

- **Vietnam**

WEB address : http://www.gigabyte.vn

- **NINGBO G.B.T. TECH. TRADING CO., LTD. - China**

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FAX: +86-27-87851330

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FAX: +86-20-87544306

Chengdu
TEL: +86-28-85236930
FAX: +86-28-85256822

Xian
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FAX: +86-29-85510930

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FAX: +86-24-83992909

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- **Saudi Arabia**

WEB address : http://www.gigabyte.com.sa

- **Gigabyte Technology Pty. Ltd. - Australia**

WEB address : http://www.gigabyte.com.au

- **G.B.T. TECHNOLOGY TRADING GMBH - Germany**

WEB address : http://www.gigabyte.de

- **G.B.T. TECH. CO., LTD. - U.K.**

WEB address : http://www.giga-byte.co.uk

- **Giga-Byte Technology B.V. - The Netherlands**

WEB address : http://www.giga-byte.nl

- **GIGABYTE TECHNOLOGY FRANCE - France**

WEB address : http://www.gigabyte.fr

- **Sweden**

WEB address : http://www.gigabyte.se

- **Italy**

WEB address : http://www.giga-byte.it

- **Spain**

WEB address : http://www.giga-byte.es

- **Greece**

WEB address : http://www.gigabyte.com.gr

- **Czech Republic**

WEB address : http://www.gigabyte.cz

- **Hungary**

WEB address : http://www.giga-byte.hu

- **Turkey**

WEB address : http://www.gigabyte.com.tr

- **Russia**

WEB address : http://www.gigabyte.ru

- **Poland**

WEB address : http://www.gigabyte.pl

- **Ukraine**

WEB address : http://www.gigabyte.ua

- **Romania**

WEB address : http://www.gigabyte.com.ro

- **Serbia**

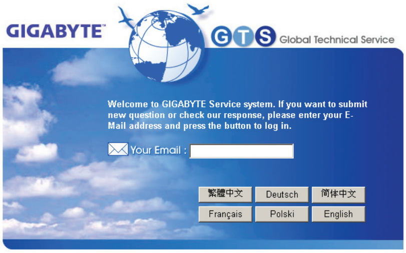
WEB address : http://www.gigabyte.co.rs

- **Kazakhstan**

WEB address : http://www.gigabyte.kz

You may go to the GIGABYTE website, select your language in the language list on the top right corner of the website.

• GIGABYTE Global Service System



Welcome to GIGABYTE Service system. If you want to submit new question or check our response, please enter your E-Mail address and press the button to log in.

Your Email :

To submit a technical or non-technical (Sales/Marketing) question, please link to:
http://ggts.gigabyte.com.tw
Then select your language to enter the system.